The Living World-MCQ

1. In majority of higher animals and plants,_____ and _____ are mutually exclusive events.

A. growth; nutrition

B. nutrition; consciousness

C. growth; reproduction

D. reproduction; consciousness

Answer: C

(Growth and reproduction are mutually exclusive events in majority of the higher animals and plants. Growth may be defined as a positive change in size, often over a period of time. Growth can occur as a stage of maturation or a process toward fullness or fulfillment. Reproduction may be defined as the production of progeny possessing features more or less similar to those of parents.)

2. In multicellular organisms _____refers to the production of progeny possessing features more or less similar to those of parents.

A. growth

B. reproduction

C. metabolism

D. consciousness

Answer: B

(Reproduction ensures the continuity of the species, generation after generation. Genetic variation is created and inherited during reproduction.)

3. Families are characterized on which of the following features of plant species?

A. External morphology

B. Anatomy of parts

C. Vegetative and reproductive parts

D. Seasonal similarities and variations

Answer: C

(A family is a subdivision of an order consisting of a group of related genera which in turn are composed of groups of related species. Families are characterized on the basis of vegetative and reproductive parts of the plants species.)

4. The sum total of all the chemical reactions occurring in our body is known as

A. metabolism

B. growth

C. regeneration

D. reproduction

Answer: A

(All living organisms are continuously making or breaking biomolecules, such conversions are due to chemical reactions, and sum total of all such chemical reactions, occurring in the body is called metabolism. Each metabolic pathway in the cell is tightly regulated by enzymes.)

5. Cell division occurs _____in plants and _____in animals.

A. continuously, only up to a certain age

B. only up to a certain age, continuously

C. continuously, never

D. once, twice

Answer: A

(All cells arise from pre-existing cells by a process of cell division. Cell division is the phenomenon of production of daughter cell from parent cell. It occurs continuously in plants and only up to a certain age in animals.

6. The fungi, the filamentous algae, the protonema of mosses, all easily multiply by _____.

A. budding

B. fission

C. regeneration

D. fragmentation

Answer: D

(Fragmentation is a sexual mode of reproduction in which an organism is split into fragments. Each of these fragments develops into mature, fully grown individuals that are clones of the original organism. The fungi, the filamentous algae and the protonema of mosses all easily multiply by fragmentation.)

7. Which of the following factors exclusively affects reproduction in seasonal breeders, both plants and animals?

A. Water

B. Temperature

C. Photoperiod

D. All of these

Answer: C

(Photoperiod is the physiological reaction of organisms to the length of day or night. It occurs in plants and animals. It can also be defined as the developmental responses of plants to the relative lengths of light and dark periods. Photoperiod exclusively affects the reproduction in seasonal breeders, both plants and animals.)

8. The keys are based on contrasting characters generally in a pair called _____.

A. flora

B. couplet

C. both (a) and (b)

D. manuals

Answer: B

(The keys are based on contrasting characters generally in a pair called couplet. Flora contains the actual account of habitat and distribution of plants of a given area. It provides the index to the plant species found in a particular area. Manuals are useful in providing information for identification of names of species found in an area.)

9. The order generally ends with

A. ales

B. aceae

C. eae

D. none of these

Answer: A

(The order generally ends with ales. Order being a higher category is the assemblage of families which exhibit a few similar characters.)

10. Which of the following are unique features of living organisms?

A. Growth and reproduction

The Living World Part 1

B. Reproduction and ability to sense environment

C. Metabolism and interaction

D. All of the above

Answer: D

(All living beings share certain unified and basic characteristics. These include organisation, energy utilization, regulation or homeostasis, growth, development, reproduction and adaptation.)

11. Which of the following aspects is an exclusive characteristic of living things?

A. Isolated metabolic reactions occur in vitro.

B. Increase in mass from inside only.

C. Perception of events happening in the environment and their memory.

D. Increase in mass by accumulation of material both on surface as well as internally.

Answer: C

(All living things have an ability to respond to their environment, that is also called stimulation.)

12. Which of the following term is used to refer the number of varieties of plants and animals on earth ?

A. Taxonomy

B. Identification

C. Biodiversity

D. Classification

Answer: C

(The term biodiversity is used for the variety and variability among all forms of living organisms like plants, animals, and microorganisms present in a given region under natural conditions. Biodiversity can be defined as the totality of genes, species and ecosystem of a region. India is very rich in biodiversity.)

13. ICBN stands for

A. International Code of Botanical Nomenclature

B. International Congress of Biological Names

C. Indian Code of Botanical Nomenclature

D. Indian Congress of Biological Names

Answer: A

(ICBN (International Code of Botanical Nomenclature) is one of the code of nomenclature which is independent of zoological and bacteriological nomenclature. The foundations of ICBN was found in Philosophia Botanica, a bookwritten by C. Linnaeus.)

14. Binomial nomenclature means

A. one name given by two scientists.

B. one scientific name consisting of a generic and specific epithet.

C. two names, one latinized, other of a person.

D. two names of same plant.

Answer: B

(Binomial nomenclature means that the scientific name of any organism consist of a generic epithet and a specific epithet. Binomial nomenclature was developed by Linnaeus.)

15. Herbarium is a

A. garden where medicinal plants are grown.

B. garden where herbaceous plants are grown.

C. dry garden.

D. chemical to kill plants.

Answer: C

(Herbarium is the store house of dead, dried, pressed and preserved plant specimens on paper sheets, called herbarium sheets. The sheets, along with description of plant specimen, are arranged according to standard system of classification, and are stored for future use. All sheets carry labels having information about date and place of collection, English, local and botanical names, family and collector's name etc. The herbarium sheets can be used as a quick reference for taxonomic studies.)

16. The famous botanical garden 'Kew' is located in

A. England

B. Lucknow

C. Berlin

D. Australia

Answer: A

(The famous botanical garden 'Kew' is located in England. Royal Botanic Garden, Kew is a non-departmental public body in the United Kingdom sponsored by the Department for Environment, Food and Rural Affairs. It is an internationally important botanical research and education institution.)

17. Which ofthe following taxonomic aid provides information for the identification of names of species found in an area?

A. Monograph

B. Manual

C. Flora

D. Periodical

Answer: B

(Manuals contain information for the identification of names of species found in an area. They also provide information about keys, description of family, genus and species.)

18. Which one of the taxonomic aids can give comprehensive account of complete compiled information of any one genus or family at a particular time?

A. Taxonomic key

B. Flora

C. Herbarium

D. Monograph

Answer: D

(Taxonomic keys are aids for rapid identification of unknown plants. Flora is an inventory of the plants of a defined geographical region. Herbarium is a safe place for storing specimens as well as provide suitable atmosphere for research. Monograph is a comprehensive taxonomy treatment of a taxonomic group, generally a genus or a family, providing all taxnomic data relating to the group.)

19. Which one of the following taxonomical aid is used for identification of plants and animals based on similarities and dissimilarities?

A. Flora

B. Keys

C. Monographs

D. Catalogues

Answer: B

(Key is a taxonomical aid used for identification of plants and animals based on the similarities and dissimilarities.)

20. The practical purpose of classification of living organisms is to

A. explain the origin of living organsims.

B. trace the evolution of living organsims.

C. name the living organisms.

D. facilitate identification of unknown organisms.

Answer: D

(Biological classification is the scientific arrangement of organisms in a hierarchical series of groups and subgroups on the basis of similarities and differences in their traits. It helps in building evolutionary pathways and in identifying new organisms.)

21. Taxon is a

A. unit of classification.

B. species.

C. highest rank of classification.

D. group of closely related organisms.

Answer: D

(Taxon is a grouping of organisms of any level in hierarchial classification which is based on some common characteristics. It represents real biological objects placed in any category while category itself is an abstract term.)

22. Systematics refers to the

A. identification and classification of plants and animals.

B. nomenclature and identification of plants and animals.

C. diversity of kinds of organisms and the irrelationship.

D. different kinds of organisms and their classification.

Answer: C

(Systematics, often used interchangeably with taxonomy, is the study of diversity of organisms, their comparative and evolutionary relationships on the basis of findings from various fields of biology.)

23. Keys are generally _____in nature.

A. physical

B. chemical

C. analytical

D. qualitative

Answer: C

(Key is a type of taxonomical aid used for the identification of plants and animals based on their similarities and dissimilarities. Keys are generally analytical in nature.)

24. Each statement in the key is called _____.

A. lead

B. catalogues

C. manuals

D. monographs

Answer: A

(Each statement in the key is called a lead. Catalogue is a list or record, systematically arranged and often including descriptive material. Monographs contain information on any one taxon. Manuals are useful in providing information for identification of names of species found in an area.)

25. Which of the following is not a characteristic of life?

A. Reproduction

B. Complex chemical organization

C. Adaptation to environmental changes

D. Differentiation from cells to tissues

Answer: D

(The characteristics of life include: responsiveness to the environment; growth and change; ability to reproduce; have a metabolism and breathe; maintain homeostasis; being made of cells; passing traits onto offspring. Differentiation from cells to tissues is not a characteristic of life.)

26. In printed scientific names, only the _____is capitalized.

A. class

B. species

C. genus

D. family

Answer: C

(In printed scientific names, only the genus is capitalized. Genus is an assembly of related species which evolved from a common ancestor and have certain common characters. Eg, Solanum tuberosum and Solanum melongena are two species which belongs to the same genus of Solanum.)

27. Each category of taxonomic hierarchy refers to as a unit of_____.

A. systematic

B. identification

C. nomenclature

D. classification

Answer: D

(Taxonomic hierarchy is the sequence of arrangements of taxonomic categories in a descending order during the classification of organisms. Each category of taxonomic hierarchy refers to as a unit of classification. Classification is the process by which anything is grouped into convenient categories based on some easily observable characters. Systematics(term coined by Linnaeus) is the study of historical relationships of groups of

biological organisms. Nomenclature is giving distinct scientific names to various structures including living organisms for their identification.)

28. Which of the following statement(s) is/are correct?

A. Only living organisms grow.

B. Plants grow only up to a certain age.

C. The growth in living organisms is from inside.

D. All of the above

Answer: C

(Growth is the act or process, or a manner of growing; development; gradual increase. It is an exclusive event in majority of the higher animals and plants. In plants, growth occurs continuously throughout their life span and in animal; growth is seen only up to a certain age. In living organisms, growth is from inside. Therefore, it cannot be taken as a defining property of living organisms.)

29. Which one of the following is not a correct statement?

A. Botanical gardens have collection of living plants for reference.

B. A museum has collection of photographs of plants and animals.

C. Key is a taxonomic aid for identification of specimens.

D. Herbarium is a store house that contains dried, pressed and preserved plant specimens.

Answer: B

(Biological museums have the collection of preserved animals and plants specimens for study and references. Biological museums are generally set up in educational institutes, i.e. schools and colleges. The specimens may be preserved dry or in preservative solution in jars or containers. The insects are preserved in insect boxes after collecting, killing and pinning. The larger

animals, like mammals and birds are stuffed and are chemically treated for long term preservation. Museums also have collection of animal skeletons.)

30. Which two points are known as the twin characteristics of growth?

(i) Increase in mass

(ii) Differentiation

(iii) Increase in number of individuals

(iv) Response to stimuli

A. (i) and (ii)

B. (i) and (iv)

C. (ii) and (iii)

D. (i) and (iii)

Answer: D

(Increase in mass and increase in number of individuals are twin characteristics of growth. Growth is defined as increase in size and mass during the development of an organism over a period of time. It is measured as an increase in biomass and is associated with cell division by mitosis, subsequent increases in cell size, and with the differentiation of cells to perform particular functions.)

31. Statement 1 : Taxon and category are different things.

Statement 2 : Category shows hierarchical classification.

A. Statement- 1 and statement-2 are true and statement-2 is a correct explanation for statement -1

B. Statement -1 and Statement -2 are true;statement-2 is not a correct explanation for statement – 1

C. Statement – 1 is true and statement- 2 is false

D. Both the statements are false.

Answer: A

(A category is a rank or level in the hierarchical classification of organisms. Taxon is a unit in classification which may represent any level of grouping of organisms based on certain common characteristics. There is some confusion in the use of taxon and category, for example Bryophyta is a taxon while division is a category.)

32. Which of the following statements regarding nomenclature is correct?

A. Generic name always begins with capital letter whereas specific name with small letter.

B. Scientific name should be printed in italics.

C. Scientific name when typed or handwritten should be underlined.

D. All of the above

Answer: D

(All the statements regarding nomenclature are correct. Nomenclature is giving distinct scientific names to various structures including living organisms for their identification. It is a set of rules used for forming the names or terms in a particular field of arts or sciences. Nomenclature is only possible when the organism is described correctly and we know to what organisms the name is attached to.)

33. Which of the following statements are correct about herbarium?

A. It is a store house of collected plant specimens that are dried and preserved on sheets.

B. Herbarium sheets contain information about date and place of collection, names, family, collector's name, etc.

C. It serves as quick referral systems in taxonomical studies.

D. All of the above

Answer: D

(Herbarium is a collection of plant parts that usually have been dried, pressed, preserved on sheets. The herbarium sheets also carry a label that provides information about date and place of collection.)

34. Which of the following statements regarding growth is in correct?

A. In plants, growth by cell division is seen only up to a certain stage.

B. Growth exhibited by non-living objects is by accumulation of material on the surface.

C. A multicellular organism grows by cell division.

D. Growth in in vitro culture of unicellular organisms can be observed by counting the number of cells.

Answer: A

(In plants, growth by cell division occurs continuously throughout their life span.)

35. Which of the following statement(s) is/are correct for Metabolsim ?

A. It is the sum total of all physical reactions taking place inside a living system.

B. All plants, animals, fungi and microbes exhibit metabolism.

C. Isolated metabolic reactions in-vitro are not living but are living reactions.

D. All of the above

Answer: B

(Metabolism is defined as the sum total of all the chemical reactions occurring in our body. All plants, animals, fungi and microbes exhibit metabolism. Isolated metabolic reactions in vitro are not living things but are living reactions.)

36. Which one of the following statements is correct about biodiversity ?

A. It is the occurrence of varied type of organisms on earth.

B. Each different kind of plant, animal or organism represents a species.

C. The number of species that are known and described range between 1.7–1.8million.

D. All of the above

Answer: D

(Biodiversity is the term used to describe the variety of life found on Earth and all of the natural processes. This includes ecosystem, genetic and cultural diversity, and the connections between these and all species. The different aspects of biodiversity all have a very strong influence on each other.)

37. Which of the following statements(i – vi) are correct ?

(i) Growth cannot be taken as a defining property of living organism.

(ii) Dead organism does not grow.

(iii) Reproduction cannot be an all inclusive defining characteristic of living organisms.

(iv) No non-living object is capable of replicating itself.

(v) Metabolism in a test tube is non-living.

(vi) Metabolism is a defining feature of all living organisms.

A. (i) and (iii)

B. All except (v)

C. All except (iii)

D. All of these

Answer: B

(An isolated metabolic reaction(s) outside the body of an organism, performed in a test tube is neither living nor non living. Metabolism is the sum total of all chemical reactions occuring in our body.)

38. Which of the following statements are not correct ?

(i) Lower the taxon, more are the characteristics that the members within the taxon share.

(ii) Order is the assemblage of genera which exhibit a few similar characters.

(iii) Cat and dog are included in the same family Felidae.

(iv) Binomial nomenclature was introduced by Carolus Linnaeus.

A. (i), (ii) and (iii)

B. (ii), (iii) and (iv)

C. (i) and (iv)

D. (ii) and (iii)

Answer: D

(Order being higher category isthe assemblage of families which exhibit a few similar characteristic. Dog (Canis familaris) and Cat (Felis domesticus) belong to two different families—Cancideae and Felidae respectively.)

39. Which of the following statements are correct?

(i) Genus comprises a group of related species.

(ii) Taxon represents a taxonomic group of individual organisms.

(iii) Family comprises a group of related genera.

(iv) Taxonomic category class includes related orders.

A. (i), (ii), and (iv)

B. (ii) and (iv)

C. (i), (iii) and (iv)

D. (ii), (iii) and (iv)

Answer: C

(The term ‘taxon’ is used to refer to any rank or level or category of the classification.)

40. Which of the following statement(s) is/are not correct ?

(i) Reproduction is the production of progeny possessing features dissimilar to their parents.

(ii) The fungi, the filamentous algae, the protonema of mosses, all multiply by budding.

(iii) Many organisms like mules, sterile worker bees do not reproduce.

(iv) Reproduction is not an all-inclusive defining characteristic of living organisms.

A. Only (i)

B. Both (i) and (ii)

C. Both (ii) and (iv)

D. All of these

Answer: B

(Reproduction refers to the production of progeny possessing features more or less similar to those of parents. The fungi, the filamentous algae, the protonema of mosses, all easily multiply by fragmentation.)

41. Which of the following statement(s) is/are correct ?

(i) All living organisms have ability to respond the environment stimuli which could be physical, chemical or biological.

(ii) Plants respond to external factors like light, water, temperature, other organisms, pollutants, etc.

(iii) Photoperiod affects the process of reproduction.

(iv) Human being is the only organism who has self-consciousness.

A. Only (i)

B. Both (ii) and (iii)

C. Both (i) and (iv)

D. All of these

Answer: D

(All the given statements are correct. All living organisms have the ability to respond the environment stimuli which could be physical, chemical or biological. Plant responds to external factors like light, water, temperature etc. Photoperiod is defined as the developmental responses of plants to the relative lengths of light and dark periods. It exclusively affects the reproduction in seasonal breeders, both plants and animals .Human being is the only organism who has self – consciousness.)

42. Which of the following statement(s) is/are correct ?

(i) Classification is the providing of standardize names to the organisms such that a particular organism known by the same all over the world.

(ii) Taxonomy is the correct description of an organism and to recognition in its scientific name.

(iii) The system of naming with two components(binomial nomenclature) is proposed by Carolus Linneaus.

(iv) Zoological names are based on International Code for Zoological Nomenclature (ICZN).

A. Only (i)

B. Both (iii) and (iv)

C. Only (iv)

D. All of these

Answer: B

(Nomenclature is the providing of standardize names to the organisms such that a particular organism known by the same name all over the world. Identification is the correct descripton of an organism and its recognition in its scientific name.)

43. Which of the following taxonomic categories is being described by the given statements(i-iii) ?

(i) It is the basic unit of classification.

(ii) It is defined as the group of individuals which resemble in their morphological and reproductive characters and interbreed among themselves and produce fertile off springs.

(iii) Human beings belong to the species sapiens which is grouped in the genus Homo.

A. Species

B. Genus

C. Order

D. Family

Answer: A

(All the given descriptions are related to taxonomic category called species. Species, the lowest category in the taxonomic hierarchy, is the basic unit of taxonomy. It is the group of individual organisms with fundamental similarities.)

44. Which of the following statement(s) is/are not correct ?

(i) Genus comprises a group of related species which has more characters in common in comparison to species of other genera.

(ii) Three different genera such as Solanum, Datura and Petunia are placed in the family malvaceae.

(iii) In case of plants, classes with a few similar characters are assigned to a higher category called phylum.

A. Both (i) and (ii)

B. Only (iii)

C. Both (ii) and (iii)

D. All of these

Answer: C

(Three different genera such as Solanum, Datura and Petunia are placed in the family solanaceae. In case of plants, classes with a few similar characters are assigned to a higher category called division. Phylum is used in case of animals.)

45. Which of the following taxonomical aids is being described by the given statements(i-iv) ?

(i) They generally established in educational institutes.

(ii) They have collections of preserved plant and animals specimens for study and reference.

(iii) Insects are preserved in boxes after collecting, killing and pinning.

(iv) They often have collections of skeletons of animals too.

A. Herbarium

B. Museum

C. Zoological parks

D. Botanical gardens

Answer: B

(All the given descriptions are related to museum. Museum is one of the taxonomic aids which may be defined as a place where large collection of specimens of plants and animals are preserved for its further study and references. Museums are generally set up in educational institutes such as schools and colleges. Museums often have collections of skeletons of animals too. Specimens of plants and animals are preserved in the containers or jars in preservative solutions. These specimens may also be preserved as dry specimens.)

46. Statement 1 : The species is reproductively isolated natural population.

Statement 2 : Prokaryotes cannot be kept under differents species on the basis of reproductive isolation.

A. Statement-1 and Statement-2 are True and statement-2 is a correct explanation forstatement-1

B. Statement -1 and statement -2 are True and statement-2 is not a correct explanation forstatement-1

C. Statement-1 is true and statement-2 is false

D. Both the statements are false.

Answer: B

(The species is genetically distinct and reproductively isolated natural population. Sexual reproduction is absent in prokaryotes and some protists. In such cases morphological differences, cytotaxonomy and chemo-taxonomy are resorted to.)

47. Which of the following statements regarding growth is incorrect?

A. In animals growth is seen up to a certain age.

B. Increase in body mass is considered as growth.

C. Growth by cell division occurs continuously throughout their life span in animals.

D. Increase in mass and number of individuals is the characteristic feature of animal growth.

Answer: C

(Growth may be defined as a positive change in size, often over a period oftime. It can occur as a stage of maturation or a process toward fullness or fulfillment. Growth by cell division occurs continuously throughout their life span in plants.)

48. Select the correct statements(i-v) regarding taxonomic categories.

(i) Each step or rank in hierarchy is called taxonomic category.

(ii) Species is a group of individual organisms with fundamental similarities capable of breeding among themselves.

(iii) Taxonomic studies of all unknown organisms have led to the development of common categories like kingdom, phylum or division, class, order, family, genus and species.

(iv) Lower the category, greater is the difficulty of determining the relationship to other taxa at the same level.

A. (i) & (ii) only

B. (ii) & (iv) only

C. (i), (ii) & (iii) only

D. All of the above

Answer: A

(Taxonomic studies of all known organisms have led to the development of common categories like kingdom, phylum or division, class, order, family, genus and species. Higher the category, greater is the difficulty of determining the relationship to other taxa at the same level.)

49. Which of the following statements is incorrect?

A. The scientific name for humans is Homo sapiens.

B. Organisms placed in the same genus are least closely related.

C. Moving from species to kingdom, more different species are included in each higher category.

D. Species that are in the same genus share very specific characteristics.

Answer: B

(Genus comprises a group of related species which has more characters in common in comparison to species of other genera. Organisms placed in the same genus are most closely related.)

50. Study the following statements and select the correct description of botanical garden.

(i) Plant species are grown for identification purposes.

(ii) Labeling of each plant consists of its botanical name/scientific name and its family.

(iii) Specimens are preserved in the jars and containers.

(iv) It is a type of store house which contains dried, pressed and preserved plants specimens on sheet.

(v) Plant specimen contains a labeling of information about date and place of collection.

A. (i) and (ii) only

B. (i), (ii) and (iii) only

C. (ii) and (iv) only

D. All the five statements.

Answer: A

(Statement (i) and (ii) are correct regarding botanical garden. A botanical garden (or botanic garden) is a garden dedicated to the collection, cultivation and display of a wide range of plants labeled with their botanical names. Botanic garden holds the documented collections of living plants for the purposes of scientific research.)

Biological Classification

1. Some bacteria thrive in extreme environment conditions such as absence of oxygen, high salt concentration, high temperature and acidic PH Name them...

(a) Cyanobacteria

(b)Eubacteria

(c)Archaebacteria

(d) Streptococcus

Answer: C

2.All the bacteria fix nitrogen except ...

(a)Rhizobium

(b) E Coli

(c)Azotobacter

(d) Cyanobacteria

Answer: B

3.The region where bacterial genome resides is termed as

(a) Nucleus

(b) Cytoplasma

(c)Nucleoid

(d) Ribosome free region

Answer: C

4.Fungi which grow in dung are termed as

(a)Caprophilous

(b)Tericolous

(c)Sacxicolous

(d)Saxiphilous

Answer: A

5. All fungi are

(a) Autotrophs

(b) Saprotrophs

(c) Heterotrophs

(d) Parasites

Answer: B

6.Which of the following is included in five kingdom classification .

(a) Monera, Protista, Animalia, Plantae, Algae

(b) Monera,Protista,Fungi,Animalia,Plantae

(c) Virus,prokaryotes,Fungi,Plantae,Animalia

(d) Algae,Fungi,Bryophyta,Pteridophyta,Gymnosperms

Answer: B

7.Who is the father of Taxonomy among the following

(a) Linnaeus

(b) Aristole

(c) Maheshwari

(d) Birbal sahani

Answer: A

8. Halophiles is also called .....

(a) Eubacteria

(b) Actinomyce

(c) Cyanobacteria

(d) Archaebacteria

Answer: D

9. By how many criteria ,living organisms have been classified into five kingdom.

(a) Two

(b) Four

(c) five

(d) Three

Answer: B

10.Prokaryotes are included in the kingdom ....

(a) Monera

(b) Protista

(c) Protozoa

(d) Basidiomycetes

Answer: A

11.Viroids were discovered by ...

(a) Diener

(b) Woese

(c) Pasteur

(d) Iyengar

Answer: A

12.The name virus was given by ...

(a)Ivanowsky

(b) Pasteur

(c) Diener

(d) Hershey

Answer: B

13.Virus have....

(a) DNA core,Lipid coat

(b) DNA or RNA core ,protein coat

(c) DNA or RNA core,plasma membrane

(d) DNA containing nucleus ,lipid envelope

Answer: B

14.A virus contains

(a) DNA

(b) RNA

(c) DNA or RNA

(d) DNA and RNA

Answer: C

15. The main structural component of virus is ...

(a) nucleic acid

(b) protein

(c) nucleic acid and protein

(d) nucleic acid or protein

Answer: C

16. Protista include...

(a) Paramecium,Euglena ,Dinoflagellates

(b) Hydra,Amoeba,Paramecium

(c) Yeast ,Euglena,Dinoflagellates

(d) Mushroom,Paramecium ,Euglena

Answer: A

17. The study of fungi is ...

(a) Cytology

(b) Mycology

(c) Virology

(d) Algology

Answer: B

18. Fungus cell wall is made up of.....

(a) Cellulose

(b) Protein

(c) Chitin

(d) carbohydrates

Answer: C

19. In Fungi reserved food materials are .....

(a) Glycogen and lipid droplets

(b) Starch

(c) Protein

(d) Lipid

Answer: A

20. Study of lichens is called .....

(a) Algology

(b) Mycology

(c) Lichenology

(d) Cytology

Answer: C

21. In lichens fungal component is known as .....

(a) Mycobiont

(b) phycobiont

(c) A & B

(d) none of these

Answer: A

22. The plant cell without chloroplast is ....

(a) Algae

(b) Fungi

(c) Bryophytes

(d) Pteridophytes

Answer: B

23. Symbiotic relationship is found in ....

(a) Algae

(b) Fungi

(c) Bryophytes

(d) Lichens

Answer: D

24. Plant of this group possess naked seed

(a) Pteridophytes

(b) Angiosperms

(c) Gymnosperms

(d) Bryophytes

Answer: C

25. Which sentence is true for Bryophytes ?

(a) They are autotrophic

(b) vascular tissues are absent

(c) Fertilisation take place in the presence of water

(d) All of the three

Answer: D

26. In which plant ,gametophytic phase is main and sporophytic phase is subsidiary.

(a) Bryophytes

(b) pteridophytes

(c) gymnosperms

(d) angiosperms

Answer: A

27.The first land plant on earth was.....

(a) Bryophytes

(b) pteridophtes

(c) gymnosperms

(d) angiosperms

Answer: B

28. The tallest living tree in the world is .....

(a) Zamia sp.

(b) Eucalyptus sp.

(c) Wolffia sp.

(d) Sequoia sp.

Answer: D

29. The smallest gymnosperm is .....

(a) Zamia sp.

(b) Eucalyptus sp.

(c) Wolffia sp.

(d) Sequoia sp.

Answer: A

30. Xerophytic characters are present in .....

(a)Bryophytes

(b) pteridophytes

(c) gymnosperms

(d) angiosperms

Answer: C

31. Microsporophyll :stamen then Megasporophyll:.....

(a) Anther

(b) Gynoecium

(c) Pollen grains

(d) Ovule

Answer: B

32. Which of the fossil member?

(a) cycas

(b) bennettites

(c) thuja

(d) pinus

Answer: B

33. The biggest and dominant group is.....

(a)Bryophytes

(b) pteridophytes

(c) gymnosperms

(d) angiosperms

Answer: D

34. Pre-fertilized endosperms is characterstics of .....

(a) pteridophyte

(b) angiosperms

(c) gymnosperms

(d) bryophytes

Answer: C

35. Class dicotyledon is divided into....

(a) 7 sub-classes

(b) 5 sub-classes

(c) 3 sub-classes

(d) 2 sub- classes

Answer: D

36. Who classified angiosperms into two classes,...

(a) theoprattus

(b) bentham and hooker

(c) Aristotle

(d) Linnaeus

Answer: B

37. Presence of rigid cell wall is characterized by kingdom...

(a) Protista

(b) plantae

(c) monera

(d) Animalia

Answer: C

38. The tallest living tree of angiosperm is ...

(a) wolffia sp.

(b) Zamia sp.

(c) Eucalyptus sp.

(d) sequoia sp.

Answer: D

39. If the seeds are formed from the megasporophylls and not enclosed in a fruits the plant belongs to

(a) pteridophyte

(b) bryophytes

(c) angiosperm

(d) gymnosperm

Answer: D

40.Embryo is not formed in ...

(a) Bryophytes

(b) algae

(c) gymnosperm

(d) pteridophytes

Answer: B

41.which classification system had been given whittaker ?

(a) 3 domain classification

(b) binomial classication

(c) 5 kingdom classification

(d) artificial classification

Answer: C

42. A: lichen shows symbiotic relationship between algae and fungi

R: algae absorb water and mineral nutrients from environment and provide to fungi

(a)both A and R true and R is the correct explanation of A

(b) both A and R true but R is not correct explanation A

(c) A is true but R is false

(d) A is false and R is true

Answer: C

43. African sleeping sickness is caused by

(a) Giardia intestinalis

(b) Leishmania

(c) Trypanosoma

(d) Entamoeba

Answer: C

44. Extra chromosomal,circular ,double stranded ,self replicating DNA molecule in bacteria is called

(a) Cosmid

(b) Plasmid

(c) Phasmid

(d) Phagemid

Answer: B

45. Membranous infolding in bacteria that initiate DNA replication is

(a) Mesosomes

(b) Carboxysome

(c)Magnetosome

(d)Nucleosome

Answer: A

46. Example of blue green algae is in

(a) Fungi

(b) Monera

(c)Protistae

(d)Plantae

Answer: B

47. TMV virus was discovered by

(a) Pasteur

(b) S L Miller

(c) Ivanowsky

(d) W M Stanley

Answer: C

48. The study of algae is called

(a) Mycology

(b)Algology

(c)Taxonomy

(d) Lichenology

Answer: B

49. On the basis of structural form lichen are..

(a) Crustose

(b) Foliose

(c)Fruticose

(d) All of three

Answer: D

50. Fruiting body is characteristic of...

(a) Algae

(b) Lichens

(c) Bryophyta

(d) Pteridophyta

Answers B

Plant Kingdom

1. The system of plant classification proposed by Carolus Linnaeus was artificial because

a) It was based on evolutionary relationship of plants

b) It was based on similarities and differences in floral and other morphological characters only

c) It took into account the physiological facts along with the morphological characters

d) None of the above

2. Linnaeus is credited with introducing

a) The concept of inheritance

b) Law of limiting factor

c) Theory of heredity

d) Binomial nomenclature

3. Out of the 4 widely known systems of classification one remains less phylogenetic and more natural and that is of

a) Engler and Prantl

b) Hutchinson

c) Bentham and Hooker

d) Rendle

4. The chief merit of Bentham and Hookers classification is that

a) it is a natural system of classification of all group of plants

b) a system based on evolutionary concept

c) it also considered the phylogenetic aspect

d) The description of taxa are based on actual examination of the specimens

5. ‘SystemaNaturae’ written by Linnaeus contains a list of

a) 4000 species of plants

b) 2000 species of plants

c) 4200 species of plants

d) 4200 species of animals

6. Natural system of classification of plants differs from artificial system of classification in

a) taking into account only one vegetative character

b) taking into account only one floral character

c) taking into account all the similarities between plants

d) all of these

7. One of the best methods for understanding general relationships of plants is

a) Cytotaxonomy

b) Experimental Taxonomy

c) Numerical Taxonomy

d) Chemotaxonomy

8. Systematics deals with

a) Identification of Organism

b) Classification of organisms

c) the kinds and diversity of all organisms and the existing relationships amongst themselves

d) identification, naming and classification of both plants and animals

9. α- taxonomy deals with

a) Classical taxonomy

b) Chemotaxonomy

c) phylogeny

d) experimental taxonomy

10. Classical taxonomy is also termed

a) β taxonomy

b) systematics

c) descriptive taxonomy

d) experimental taxonomy

11. The advantage of Systematics is that it

a) gives an idea of organic diversity, its origin and evolution in the plant and animal kingdom

b) is complementary to other branches of biology

c) provides correct information needed in agriculture, medical, veterinary sciences etc.

d) All of these

12. Syngenesious anthers and epipetalous stamens are found in

a) Liliaceae

b) Malvaceae

c) Solanaceae

d) Compositae

13. Indefinite stamens are characteristic of family

a) Malvaceae

b) Gramineae

c) Labiatae

d) Cruciferae

14. Synandrous condition is common in the family

a) Umbelliferae

b) Rosaceae

c) Malvaceae

d) Cucurbitaceae

15. Polyadelphous condition is found in

a) Leguminosae

b) Rutaceae

c) Compositae

d) Liliaceae

16) Number of series in Polypetalae are

a)2

b)3

c)4

d)5

17) Earlier classification emphasized on

a) Reproductive characters

b) Vegetative characters

c) Both

d) Anatomical characters

18) Naming a plant is called

a) Systematic botany

b) Nomenclature

c) Taxonomy

d) Cytology

19) Bentham and Hooker's classification is a

a)phylogenetic system of classification

b) artificial system of classification

c) natural system of classification

d) sexual system of classification

20) Carolus Linnaeus proposed classification based on

a) Artificial system

b) Nature system

c) Phylogenetic system

d) Modern system

21) Genera Plantarum was published by

a)Engler and Prantl

b) Carolus Linnaeus

c) Bentham and Hooker

d) Darwin

22) Number of seed plants described by Bentham and Hooker's classification were

a) 102

b) 302

c) 402

d) 202

23) The classification that is exhaustive and broad based

a) Modern System

b) Phylogenetic System

c) Natural System

d) Artificial System

24) The system of classification widely accepted and followed in India is the one proposed by

a) Carleus Linnaeus

b) Adolf Engler and Karl Prantl

c) Lamarck

d) Bentham and Hooker

25) Thalamus is prominent in

a)Thalamiflorae

b)Disciflorae

c)Caliciflorae

d)Inferae

26) "An Integrated system of classification of flowering plants" appeared in the year

a) 1881

b) 1981

c) 1883

d) 1859

27) The largest group of plant kingdom is

a) Cryptogams

b) Angiosperms

c) Gymnosperms

d) Phanerogams

28) The later system of classification laid more importance

a) Reproductive characters

b) Vegetative characters

c) Both

d) Anatomical characters

29) The first part of Genera Plantarum appeared in

a) June 1852

b) July 1882

c) April 1883

d) July 1862

30) Number of volumes in Genera Plantarum

a) Two

b) Three

c) Four

d) Five

31) A good example for natural system of classification is that proposed by

a) Carolus Linnaeus

b) Bentham and Hooker

c) Adolf Engler and Karl Prantl

d) Arthur Cronquist and Adjunct

32) Royal Botanical Garden is situated at

a) United States of America

b) England

c) French

d) India

33) All important character are considered for classification in

a) Artificial system

b) Nature system

c) Phylogenetic system

d) Modern system

34) The family Gnetaceae is included under

a)Monochlamydae

b) Monocotyledons

c)Dicotyledons

d) Gymnosperms

35) Bacteria are found to be primitive organisms because they

a) are small, microscopic which are not seen with naked eye.

b) cause serious diseases to human being, domesticated animals and crop plants.

c) produce endospores which are very resistant to adverse conditions.

d) possess incipient nucleus and show amitotic division.

36) Which one single organism or the pair of organisms is correctly assigned to its taxonomic group?

a) Paramecium and Plasmodium belong to the same kingdom as that of Penicillium.

b) Lichen is a composite organism formed from the symbiotic association of an alga and a protozoan.

c) Yeast used in making bread and beer is a fungus.

d)nostoc and anabaena are examples of protista.

37) Bacteria were regarded to be plants because

a) some of them are green in colour.

b) they are present every where.

c) some of them cannot move.

d) they have a rigid cell wall.

38) A fungus contains cells with two nuclei from different genomes. The nuclei do not fuse but divide independently and simultaneously as new cells are formed. This fungus belongs to

a) phycomycetes

b) zygomycetes

c) deuteromycetes

d) basidiomycetes

39) Ustilago causes plant diseases (called smuts) because

a) they parasitize on cereals.

b) they lack mycelium.

c) they develop sooty masses of spores.

d) their affected parts becomes completely black.

40) In some viruses, RNA is present instead of DNA indicating that

a) their nucleic acid must combine with host DNA before replication.

b) they cannot replicate.

c) there is no hereditary information.

d) RNA can transfer heredity material.

41) When a moist bread is kept exposed in air, it becomes mouldy and black because

a) spores are present in the water.

b) spores are present in the bread.

c) spores are present in the air.

d) the bread decomposes.

42) Lichens indicate SO2 pollution because they

a) show association between algae and fungi.

b) grow faster than others.

c) are sensitive to so2.

d) flourish in so2 rich environment.

43) A virus can be considered a living organism because it

a) responds to touch stimulus

b) respires

c) reproduces (inside the host)

d) can cause disease

44) Bacteria lack alternation of generation because there is

a) neither syngamy nor reduction division.

b) no distinct chromosomes.

c) no conjugation.

d) no exchange of genetic material.

45) Yeast is not included in protozoans but in fungi because

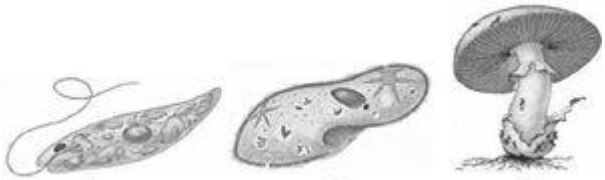
a) it has no chlorophyll.

b) some fungal hyphae grow in such a way that they give the appearance of pseudomycelium.

c) it has eukaryotic organization.

d) cell wall is made up of cellulose and reserve food material is starch.

46) Identify the following figures A, B and C.

- 

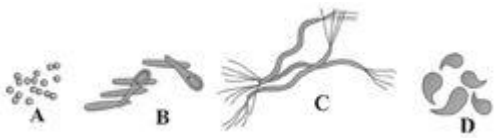
a) A – Euglena, B – Paramecium, C – Agaricus

b) A – Euglena, B – Planaria, C – Agaricus

c) A – Planaria, B – Paramecium, C – Agaricus

d) A – Euglena, B – Paramecium, C – Aspergillus

47)Choose the correct names of the different bacteria given below according to their shapes.

- 

a) A – Cocci, B – Bacilli, C – Spirilla, D – Vibrio

b) A – Bacilli, B – Cocci, C – Spirilla, D – Vibrio

c) A – Spirilla, B – Bacilli, C – Cocci, D – Vibrio

d) A – Spirilla, B – Vibrio, C – Cocci, D – Bacilli

48) Select the correct match from the given option.

a) Occurrence of dikaryotic stage – ascomycetes and basidiomycetes.

b) Saprophytes – They are autotrophic and absorb soluble organic matter from dead substrates.

c) Vegetative mean of reproduction in fungi – fragmentation, budding and sporangiophores.

d) Steps involved in asexual cycle of fungi – plasmogamy, karyogamy and meiosis in zygote resulting in haploid spores.

49) Which of the following groups of protozoan is not correctly matched with its feature?

a) Amoeboid – Marine forms have silica shells on their surface.

b) Flagellated – Either free living or parasitic.

c) Ciliated – Actively moving organisms due to presence of cilia.

d) Sporozoans – Move and capture their prey with the help of false feet.

50) Which of the following pair is correctly matched ?

a) fungi saprophytic parasitic mode of nutrition.

b) monera nuclear membrane is present.

c) plantae cell wall is made up of cellulose.

d) animalia cell wall is absent.

ANSWER KEY:-

1	D	11	D	21	C	31	B	41	B
2	D	12	D	22	D	32	B	42	C
3	C	13	A	23	A	33	B	43	C
4	D	14	D	24	D	34	D	44	A
5	D	15	B	25	C	35	D	45	B
6	C	16	C	26	B	36	C	46	A
7	D	17	B	27	B	37	D	47	A
8	C	18	B	28	A	38	D	48	A
9	A	19	C	29	D	39	D	49	D
10	C	20	A	30	B	40	D	50	B

Animal kingdom

1. Among the following, most complex level of organization is present in

(a) Annelida

(b) Platyhelminthes

(c) Coelentrata

(d) Porifera

Ans a

2. The layer absent in the embryos of diploblastic animals is

(a) Ectoderm

(b) Mesoderm

(c) Endoderm

(d) Mesoglea

Ans b

3. In the course of evolution, true coelom appeared for the first time in

(a) Chordata

(b) Annelida

(c) Aschelminthes

(d) Echinodermata

Ans b

4. On which body side, the notochord is formed during the embryonic development?

(a) Lateral

(b) Ventral

(c) Dorsal

(d) Bilateral

Ans c

5. Which of the following animals have tube within tube body plan evolved along deuterostomic evolutionary line?

(a) Annelids

(b) Arthropods

(c) Echinoderms

(d) Molluscs

Ans c

6. The larva of mosquitoes are

(a) Maggot

(b) Wriggler

(c) Tornaria

(d) Grub

Ans b

7. The fertilization is _____ and development is _____ in sponges.

(a) External, Indirect

(b) External, direct

(c) Internal, Indirect

(d) Internal, direct

Ans a

8. Which of the following is not the function of water transport system in sponges?

(a) Circulation of food

(b) Respiratory exchange

(c) Removal of wastes

(d) Nervous Control

Ans d

9. Spongilla is

(a) Bath Sponge

(b) Boring Sponge

(c) Deadman's Fingers

(d) Freshwater sponge

Ans d

10. Which among the following is given as a gift in Japan?

(a) Spongilla

(b) Euplectella

(c) Cliona

(d) Chalina

Ans b

11. Which of the following cnidarian exhibits Metagenesis?

(a) Hydra

(b) Adamsia

(c) Obelia

(d) Meandrina

Ans b

12. Pearl is produced by

(a) Pinctada

(b) Pila

(c) Aplysia

(d) Octopus

Ans a

13. How many classes are there in Phylum Platyhelminth

(a) Three

(b) Two

(c) Four

(d) Five

Ans a

14. Which of the following statements is incorrect about sea walnuts?

(a) They are diploblastic animals

(b) They exhibit tissue level of organization

(c) They undergo indirect development

(d) Fertilisation is internal

Ans d

15. Flatworms are

(a) Pseudocoelomate

(b) Triploblastic

(c) Coelomates

(d) Diploblastic

Ans b

16. Mushroom gland is seen in

(a) Earthworm

(b) Cockroach

(c) Frog

(d) Snake

Ans b

17. In contrast to annelids, flatworms show

(a) Absence of body cavity

(b) Bilateral Symmetry

(c) Radial symmetry

(d) Pseudocoel

Ans a

18. Syncytial epidermis occurs in

(a) Ascaris

(b) Wucheraria

(c) Ancylostoma

(d) Enterobius

Ans a

19. Female ascaris can be differentiatied from male by

(a) Presence of cloaca

(b) Presence of penial setae

(c) Shorter Size

(d) Longer than male

Ans d

20. An intermediate host is present in

(a) Ascaris

(b) Wucheraria

(c) Ancylostoma

(d) Enterobius

Ans b

21. The secondary host of Wucheraria is

(a) Anopheles

(b) Sand Fly

(c) Tse tse fly

(d) Culex

Ans d

22. Which of the following enters the body through the skin of feet in man, if he walks bare footed in contaminated soil?

(a) Ascaris

(b) Wucehraria

(c) Ancylostoma

(d) Enterobius

Ans c

23. Nereis possess lateral appendages, which help in

(a) Locomotion

(b) Swimming

(c) Respiration

(d) All of these

Ans d

24. Which of the following is free living

(a) Ascaris

(b) Wucheraria

(c) Hirudinaria

(d) Planaria

Ans d

25. All of the following are sensory structures of arthropods, except

(a) Ocilla

(b) Stat cysts

(c) Antennae

(d) Malpighian tubules

Ans d

26. The tracheal system helps in the

(a) Digestion

(b) Excretion

(c) Respiration

(d) Reproduction

Ans c

27. Blood of insects is

(a) Colourless

(b) Red

(c) Blue

(d) Green

Ans a

28. Choose the incorrect match

(a) Gregarious Pest – Locusta

(b) Living fossil – Limulus

(c) Vector – Lucifer

(d) Economy – Apis

Ans c

29. What is common between earthworm and cockroach?

(a) Nephridia

(b) Closed circulation

(c) Solid ventral nerve cord

(d) Malpighian Tubules

Ans c

30. Which of the following is not an exclusive trait of Arthropoda?

(a) Presence of wings

(b) Jointed Appendages

(c) Compound Eyes

(c) Chitin Exoskeleton

Ans a

31. Eye of which molluscan group resembles vertebrate eye?

(a) Bivalvia

(b) Gastropoda

(c) Pelecypoda

(d) Cephalopoda

Ans d

32. Silver fish is

(a) Mollusca

(b) Arthropoda

(c) Cnidaria

(d) Annelida

Ans b

33. Study of shells of mollusca is known as

(a) Malcology

(b) Conchology

(c) Ophiology

(d) Saurology

Ans b

34. Tailed Amphibian is

(a) Unio

(b) Urodele

(c) Salamander

(d) Nautilus

Ans c

35. Larva is radially symmetrical but adult is Bilateral symmetry in

(a) Phylum Mollusca

(b) Phylum Echinodermata

(c) Phylum Annelida

(d) Phylum Hemichordata

Ans b

36. Gill cover in fishes are also called as

(a) operculam

(b) Parapodium

(c) Scales

(d) Dentalium

Ans a

37. Pseudocoelomate among the following are

(a) Wucheraria

(b) Planaria

(c) Periplanata

(d) None

Ans a

38. Phylum Echinodermata

(a) All are freshwater

(b) Some are marine

(c) All are marine

(d) Except few all are marine

Ans c

39. Scientific name of our National Bird is

(a) Pheretima posthuma

(b) Pavo cristatus

(c) Periplnata Americana

(d) None

Ans b

40. Vertebrate heart is

(a) Dorsal

(b) Ventral

(c) Lateral

(d) Dorso ventral

Ans b

41. Cockroach has

(a) 2 chambered heart

(b) 3 Chambered heart

(c) 4 Chambered heart

(d) 13 chambered heart

Ans d

42. Pneumatic bones are seen in

(a) Fishes

(b) Amphibians

(c) Repliles

(d) Aves

Ans d

43. Which of the following are not Viviparous

(a) Sharks

(b) Scorpions

(c) Platypus

(d) Bats

Ans c

Morphology of Flowering Plants

1. Which of the following plants bear hygroscopic roots?
(a) Bryophyllum (b) Cuscuta (c) Vanda (d) Rhizophora

2. In which of thefollowing, the plants are all roots?
(a) Podostemon (b) Lemna (c) Wolffia (d) Utricularia

3. The region of root hair in a root lies just behind:
(a) Region of maturation (b) region of elongation (c) meristematic region (d) region of root cap

4. In one of the following the stem performs the function of storage and perennation:
(a) Ginger (b) wheat (c) radish (d) ground nut

5. Lack of which element has made some plants insectivorous:
(a) Iron (b) Magnesium (c) Nitrogen (d) sodium

6. Velamen absorbs moisture from :
(a) Air (b) root (c) Leaves (d) Mineral salts

7. Leaves are changed into spines in xerophytic structures called:
(a) Phyllode (b) cladode (c) phylloclade (d) all the above

8. Match the type of fruits listed in Column I with the examples listed in Column II. Choose the correct combination.

Column I	Column II
Capsule	(p) paddy
Berry	(q) mango
Drupe	(r) sunflower
cypsela	(s) tomato

(a) a-t,b-s,c-q,d-r
(b) a-t,b-r,c-p,d-q
(c)a-s,b-t,c-q,d-r
(d)a-p,b-q,c-r,d-t

9. In guava ,cucurbits flowers are:
(a) hypogynous flower (b)epigynous flower © perigynous (d) both (a) and (c)

10. Seed coat is not thin, membranous in :
(a) coconut (b) ground nut (c) gram (d) maize

11. What is the characteristic of haustorial roots of Cuscuta?
(a) Presence of both xylem and phloem (b) Presence of only xylem © Presence of phloem (d) Absence of both xylem and phloem

12. Which part of the flower is highly modified stem?
(a) Androecium (b) thalamus (c) gynoecium (d) sepal

13. Which plant lives in nitrogen deficient soil?
(a) Neottia (b) mango (c) wheat (d) Drosera

14. Angiosperms differ from gymnosperms in
(a) Having compound leaves (b) being smaller in size (c) being evergreen (d) having ovules enclosed in the ovary

15. When ant part other than blade of leaf become flattened to perform function of leaf , it is :
(a) Cladode (b) Phyllode (c) staminode (c) stipule

16. Pericarp and placentae are edible part of simple fleshy berry fruit is:
(a) Tomato (b) date palm (c) jack fruit (d) banana

17. Which of the following are the characteristic features of solanaceae?
(a) Exstipulate leaves (b) persistent calyx (c) racemose inflorescence (d) both (a) and (b)

18. Leaf lamina is reduced in:
(a) Hydrophytes (b) mesophytes (c) xerophytes (d) epiphytes

19. Grasses are examples of the following typeof stem:
(a) Suckers (b) runners (c) stolons (d) rhizomes

The leaves of dicotyledonous plants are mostly
(a) Hypostomatic (b) epistomatic (c) astomatic (d) ampistomatic

21. Parallel multicostate venation is found in
(a) Plum (b) palm (c) castor (d) cucurbita

22. The tendrils in smilax are the modification of
(a) Leaf (b) stem (c) stipules (d) leaflet

23. The vegetable cabbage is a
(a) Modified stem (b) inflorescence (c) rhizome (d) bud

24. The edible portion in radish is
(a) Fleshy stem (b) fleshy root (c) tuber (d) corm

25. The flower is modified
(a) Shoot (b) branch (c) leaf let (d) stipule

26. In potato food is stored in
(a) Stem (b) root (c) petiole (d) leaves

27. If leaf base is swollen , it is called as
(a) Epipodium (b) stylopodium (c) pulvinus (d) pinnule

28. Mint plant produces
(a) Rhizome (b) offset (c) stolon (d) sucker

29. The spice clove is dried
(a) Flower (b) flower bud (c) fruit (d) seed

30. Spot out the stranger
(a) Radish (b) carrot (c) brinjal (d) turnip

31. Succulents are likely to be found in
(a) Tropical rain forest (b) deciduous forest (c) desert (d) tundra

32. The family cruciferae is also known as
(a) Tetradynaceae (b) brassicaeae (c) raphanaceae (d) siliquaceae

33. In compositae the placentation is
(a) Basal (b) marginal (c) free central (d) axile

34. Mimosa belongs to the family
(a) Mimosodae (b) rosaceae (c) malvaceae (d) cruciferae

35. Perianth is reduced to lodicules in the family
(a) Lilliaceae (b) graminae (c) compositae (d) Malvaceae

36. The inflorescence in compositae is
(a) Umbel (b) spike (c) capitulum (d) catkin

37. Triticumaestivumis
(a) Diploid (b) triploid (c) haploid (d) hexaploid

38. In which of the following families calyx is modified into pappus
(a) Cruciferae (b) leguminoceae (c) compositae (d) solanaceae

39. Papilionaceous corolla is found in
(a) Pisumsativum (b) mimosa pudica (c) delonix (d) brassica

40. The placenta is attached to the developing seed near the
(a) Testa (b) hilum (c) micropyle (d) chalaza

41. Climbing roots occur in
(a) Vanilla (b) vanda (c) pongamia (d) taeniophylum

42. Approximately diameter of Victoria leaf is
(a) 1m (b) 1.3m (c) 3m (d) 2m

43. Botanical name of venus fly trap is
(a) Aldrovanda (b) dionaea (c) utricularia (d) napanthus

44. Black pepper is a
(a) Tree (b) climber (c) shrub (d) herb

45. The ovary is half inferior in flowers of
(a) Sunflower (b) lemon (c) mustard (d) pea

46. Stipular tendril modification found in
(a) Smilax (b) pea (c) guava (d) mimosa pudica

47. Viscum is a
(a) Total stem parasite (b) total root parasite (c) partial stem parasite (d) partial root parasite

ANSWER KEYS

1 (c)	2 (a)	3 (b)	4 (a)	5 (c)	6 (a)	7 (c)	8 (a)	9 (b)	10(a)
11(a)	12(b)	13(d)	14(d)	15(b)	16(a)	17(d)	18(c)	19(b)	20(a)
21(b)	22(c)	23(a)	24(b)	25(a)	26(c)	27(d)	28(b)	29(c)	30(c)
31(b)	32 (b)	33(a)	34(a)	35(b)	36(c)	37(d)	38(c)	39(a)	40
41(b)									

Anatomy of Flowering Plants

1.The apical meristem of the root is present.

(a) Only in the radical

(b) Only in adventitious root.

(c) Only in tap roots

(d) In all the roots

2. Vascular tissue in flowering plants develops from.

(a) Periblem

(b) Phellogen

(c) Dermatogen

(d) pleorome.

3. Palisade parenchyma is absent in leaves of ..

(a) Mustard

(b) Gram

(c) Syabean

(d) Sorghum.

4. Casparian strips are the characterstics of ..

(a) Cortex

(b) Endodermis

(c) Pericycle

(d) Pith

5. Root cap is formed by...

(a) Dermatogen

(b) Vascular cambium

(c) Calyptrogen

(d) Wound cambium.

6. Lenticels and hydathodes are small pores with which of the the common attributes ?

(a) They are always closed

(b) They allow exchange of gases.

(c) Their opening and closing are not regulated

(d) They are found on the same organ of plant.

7. The functions of vessel is ..

(a) To provide mechanical streant

(b) Conduction of water and minerals

(c) Conduction of food only

(d) All of these .

8. Cambium is ..

(a) Lateral meristem

(b) Intercalary meristem.

(c) Primary meristem

(d) Nome of above.

9. Cork cell contains...

(a) Suberin.

(b)Cutin

(c) Lignin

(d) Pectin

10. Root branches arise from .

(a) Pericycle

(b) Endodermis

(c) Cortex

(d) Epidermis.

11. Procambium forms..

(a)cork cambium

(b) vascular tissue

(C) vascular cambium

(d) intercalary meristem

12. Another name of phellogen is

(a)cork

(b) phelloderm

(c) cork cells

(d) cork cambium

13. The stem of submerged hyrophytes is soft & weak due to

(a) absence of xylem

(b) absence of stomatals

(c)absence of phloem

(d) reduced mechanical tissue & xylem

14. which of the following is enucleated?

(a) vessels

(b) sieve cells

(c)compound cells

(d) tracheids

15. Functional xylem in dicot stem is:

(a) spring wood

(b) autumn wood

(c) heart wood

(d) sap wood

16. Wood is common name of

(a)Cambium

(b) vascular bundles

(c) phloem

(d)secondary xylem

17.Evergreen trees remains greenthroughout the year on account of

(a)absence of leaf fall

(b) cold climate

(c) supply of moisture throughout the year

(d) leaves falling in small no. at regular intervals.

18. Sap wood is synomymous with

(a) bark

(b) periderm

(c) outer layer of secondary xylem

(d) inner layer of secondary xylem

19. The waxy substance associated with the wall of cork cell is...

(a) cutin

(b) suberin

(c) lignin

(d) hemicellulose

20. Which of the following tissue originate from ray initials of cambium?

(a)tracheids & vessels

(b) sieve tubes & companion cells

(c) xylem & phloem fibres

(d) vascular rays

21. Abnormal secondary growth is found in..

(a) dracaena & yucca

(b) triticum

(c) helianthus

(d) cucurbita

22. Diffuse porous woods are characteristic of plant growing in

(a) alpine region

(b) cold winter region

(c) temperate climate

(d) tropics

23. The healing of wounds in plants takes place by activity of

(a)apical meristem

(b) lateral meristem

(c) secondary meristem

(d)intercalary meristem

24. The process of conversion of meristamatic tissue to permanent cell is....

(a) dedifferention

(b) undifferentation

(c) differentiation

(d) none of these.

25. which is livimg mechanical tissue

(a) phloem

(b) parenchyma

(c) collenchyma

(d) sclerenchyma.

26. Cambium activity is highest in ..

(a) spring

(b) winter

(c) atumn

(d) rainy

27. Which of the following cells are selcreatory as well as excreatory in function?

(a)oil glands of plants

(b)latex cells

(c) sudoriferous cells

(d) none of these.

28. sieve tube is...

(a) enucleated

(b) dead cells

(c) multinucleated

(d) nucleated.

29. Biocollateral vascular bundle is a charactersistic feature of family..

(a) cucurbitaceae

(b) cruciferae

(c) brassicaceae

(d) solanaceae

30. Exarch primary xylem is a feature of

(a) all leaves

(b) dicot stem

(c) all roots

(d) monocot stems.

31. Duramen is

(a)periderm

(b) bark

(c) sapwood

(d) heartwood

32. Shoot apical meristem is found in the tip of

(a)plumule

(b) radicle

(c) root

(d) apex

33. Piths are formed on the cell wall due to lack of-

(a) cell plate

(b) Primary wall material

(c) Secondary wall material

(d) Middle lamella.

34. Annual ring are found in plants belonging to-

(a) Alpine regions

(b) Temperate area

(c) Tropics

(d) Near sea beaches .

35. Histogen theory was produced by.

(a) Hanstein

(b) Eamu

(c) Esamam

(d) Schmidit.

36. Mesarch xylem is common in.

(a) Ferns

(b)Dicots

(c) Bryophytes

(c) Monocots.

37. Desert grasses often roll their leaves due to presence of—

(a) Oily surface

(b) Bulliform cells

(c) Spines

(d) All of these.

38. Jute is a..

(a) Bast fibre from secondary xylem.

(b) Bast fibres from primary xylem.

© Bast fibres from secondary phloem.

(d) Bast fibres from primary phloem.

39. Which among the permanent cells are circular and long even elongated cells ?

(a) Prenchyma

(b)collenchyma

(c) Sclerenchyma

(d) None of these.

40. Stele is made up of –

(a) Vascular bundles

(b) Pericycle

(c) Pith

(d) All of these .

41. Which of the following is the correct statement. ?

(a) Pith is larger in monocot root.

(b) Pith is smaller in dicot root.

© Pith is equal in size in both.

(d) Both (a) and (b).

42. Which of the following is collectively known as periderm ?

(a) Phellogen .

(b) Phellem

(c) Phelloderm

(d) All of these .

43. Wood is common name of

(a)cambium

(b)vascular bundles

(c) phloem

(d) secondary xylem

44. As a tree grows older , which increases rapidly in thickness

(a)its heartwood

(b) its sapwood

(c) its cortex

(d) its phloem

45. In old tissue gaseseous exchange takes place through

(a)stomata

(b) arenchyma

(c) hydathodes

(d)lenticles

46. Cork cambium in a dicot root is derived from

(a) hypodermis

(b)epidermis

(c) pericycle

(d)cortex

47. In hollow hearted plant

(a) root woll die first

(b) shoot will die first

(c)root and shoot will die at same time

(d) neither will die

48. Quinine , imp. in treatment of malaria is exctracted from

(a)bark of cinchona

(b)bark of cinnamon

(c)bark of hevea

(d) fascicular cambium

49. Interfascicular cambium is situated

(a) in between vascular bundles

(b)outside vascular bundles

(c)inside vascular bundles

(d)in pith

50. The cork is an excellent material for making bottle stoppers since it is..

(a) cheap

(b) easily available

(c) air tight

(d) light

ANSWERS

1. In all roots
2. Plerome
3. Sorghum
4. Endodermis
5. Calyptrogen
6. They allow exchange of gases
7. Conduction of water and minerals
8. Primary meristem
9. Suberin
10. Pericycle
11. Vascular tissue
12. Cork cambium
13. Reduced mechanical tissue and xylem
14. Sieve cells
15. sap wood
16. secondary xylem
17. supply of moisture throughout the year
18. outer layer of secondary xylem
19. suberin
20. vascular rays
21. Dracaena & yucca
22. temperate climate
23. secondary meristem
24. Differentation
25. Collenchyma
26. Spring
27. Latex cells
28. Enucleated
29. Cucurbitaceae
30. All roots
31. Heart wood
32. Apex
33. Secondary wall material
34. Temperate areas

35. Hanstein
36. Ferns
37. Bulliform cells
38. Bast fibre from secondary phloem
39. Sclerenchyma
40. All of these
41. .Both (A) and (B)
42. All of these
43. Secondary xylem
44. Its heartwood
45. Lenticels
46. Pericycle
47. 50 years
48. Bark of cinchona
49. Inside vascular bundles
50. Air tight

Structural Organisation in Animals

1	Which type of tissue forms the inner of a blood vessel?
	a) Epithelial b) Connective c) Muscle d) Nervous
2	In which of the following, the plasma membrane of the epithelial lining is Modified in to microvilli?
	a) Tubules of the testis b) Vagina c) Intestine d) Urinary tract
3	The actively dividing layer of columnar cells in the epidermis of man is called as the
	a) Stratum granulosum b) Stratum lucidum c) Stratum Malpighi d) Stratum corneum
4	The outermost layer of skin called stratum corneum is composed of
	a) Completely dead and keratinised cells

	b) Living and most actively dividing cells c) Most of dead keratinized cells but some living cells d) Living keratinized cells
5	Which type of tissue forms glands?
	a) Epithelial b) Connective c) Nervous d) Muscle
6	Mostly the mammary glands are modified
	a) Sebaceous glands b) Apocrine glands c) Cutaneous glands d) Holocrine glands
7	Ligaments are made up of
	a) White fibres and some yellow elastic fibres b) White fibres only c) Yellow fibres only d) Yellow fibres and muscle fibres
8	The bone of a mammal contains Haversian canals, which are connected by transverse canals known as
	a) Semicircular canals b) Inguinal canals

	c) Volkmann' canal d) Bidder' canal
9	Cardiac muscle is made up of branched fibres that are
	a) Non-striated and under voluntary control b) Striated and not under voluntary control c) Non-striated and not under voluntary control d) Striated and under voluntary control
10	The efferent process of neuron is known as
	a) Dendron b) Axon c) Cyton d) dendrite
11	Schwann cells and nodes of Ranvier are found in
	a) neurons b) chondroblasts c) osteoblasts d) gland cells
12	The plasma protein, which maintains the osmotic pressure of blood is
	a) albumin b) globulin c) fibrinogen

	d) prothrombin
13	A bipolar neuron has
	a) 1 dendron and 1 axon b) 2 axons and 2 dendrites c) 2 dendrites and 1 axon d) 2 axons and 1 dendrite
14	Mast cells of connective tissue contain
	a) Heparin and calcitonin b) Serotonin and melanin c) Vasopressin and relaxin d) Heparin and histamine
15	Metamerism is characteristic feature of phylum
	a) Porifera b) Platyhelminthes c) Annelida d) Mollusca
16	Blood is red but but there are no red blood cells in
	a) earthworm and leeches b) leeches c) cockroach d) bedbug

17	Which of the following statements is true for *pheretima*?
	a) it is a dioecious animal with distinct sexual dimorphism b) in it copulation occurs in night in burrow during rainy season c) it can copulate throughout the year whenever it rains d) it cannot travel both backwards and forwards
18	In earthworm, setae are absent from
	a) clitellum, first and last segments b) clitellum c) first segment d) clitellum and last segment
19	Abdomen of cockroach has segments a) 6 b) 10 c) 11 d) 12
20	First wing in cockroach is a hard leathery structure and is called
	a) Elytron attached to prothorax b) Tegmina attached to prothorax c) Elytron attached to mesothorax d) Tegmina attached to mesothorax
21	Which of the 2 parts in cockroach are fundamentally similar in structure?
	a) Anal styles and labrum

	b) Maxillae and legs c) Mandibles and antennae d) Wings and cerci
22	In cockroach lower lip or labium refers to
	a) Mentum b) Submentum c) First maxilla d) Second maxilla
23	Number of Malpighian tubules present in cockroach is
	a) 60-70 b) 80-90 c) 100-150 d) 200-250
24	Three chambered heart of frog is not as proficient as four chambered human heart because
	a) Ventricle does not pump blood properly b) It does not hold enough blood c) Heart muscles are not strong d) Oxygenated and deoxygenated bloods mix up
25	Chloragogen cells of *pheretima* are specialized for
	a) Nutrition b) Reproduction

	c) Excretion d) Respiration
26	Mating in earthworm occurs during
	a) Night in rainy season b) Night in water c) Night in summer season d) Day in rainy season
27	Structure present in man but absent in frog is a) Salivary glands b) Pancreas c) Adrenal glands d) Gall bladder
28	The glands present in skin of frog are
	a) Mucous and poisonous b) Sweat and mammary c) Sweat and sebaceous d) Sweat and mucous
29	In frog, jelly around the eggs is deposited
	a) In water after fertilization b) In water during fertilization c) In the oviduct

	d) In the ovary
30	The heart in cockroach is longitudinal beaded and there are a) 2 chambers in thorax and 11 in abdomen b) 3 chambers in thorax and 10 in abdomen c) 2 chambers in thorax and 10 in abdomen d) 3 chambers in thorax and 9 in abdomen
31	The blood of cockroach is colorless because a) There is no respiratory pigment b) Circulatory system is open type c) Circulatory system is closed type d) There are no salts in blood
32	Cockroach blood does not contain respiratory pigments, it means that a) Cockroach does not respire b) Cockroach respire anaerobically c) Oxygen reaches tissue through tracheoles d) Oxygen passes to all the tissues through diffusion
33	How many pairs of spiracles are found in cockroach a) 3 pairs in thorax and 10 pairs in abdomen b) 2pairs in thorax and 8 pairs in abdomen

	c) 2 pairs in thorax and 6 pairs in abdomen d) 1 pair in thorax and 7 pairs in abdomen
34	Earthworms are called ‘friends of farmers’ because a) Their burrows make the soil loose b) They are used as fish meal c) They kill the birds due to biomagnification of chlorinated hydrocarbons d) They make the soil porous, leave their castings and organic debris in the soil
35	Movement of coelomic fluid helps in locomotion of a) Hydra b) Frog c) Starfish d) earthworm
36	In earthworm, septa are absent in a) first 4 segments b) 5/6,10/11 c) 5/6,7/8 d) 6/7,7/8
37	In earthworm oxygen carrying haemoglobin occurs in a) Plasma b) Corpuscles

	c) Both corpuscles and plasma d) The statement is wrong
38	The region of earthworm, which is forest of nephridia a) Clitellar region b) Pharyngeal region c) Typhlosolar region d) Intestinal region
39	Which one of the following is an oxygen carrying blood pigment of earthworm? a) Haemocyanin b) Haemoglobin c) Haemoerythrin d) chlorocruorin
40	In frog, two phalenges occur in a) pollex b) hallux c) third finger d) third toe
41	Chloragogen cells are a) respiratory only b) circulatory only

	c) excretory only d) polyfunctional
42	Which is characteristic of common cockroach species? a) 13-chambered heart b) Reduced wings c) Cocoon formation d) Segmented body
43	Malpighian tubules of cockroach are found at the junction of a) Crop and proventriculous b) Stomodaeum and proctodaeum c) Mesenteron and proctodaeum d) Proctodaeum and stomodaeum
44	Collateral glands of cockroach help in a) Formation of ootheca b) Formation of oothecal chamber c) Copulation d) fertilization
45	Blood glands of *pheretima* occur in segments a) 1,2 and 3 b) 3,4 and 5

	c) 4,5 and 6 d) 10,11 and 12
46	Pharyngeal nephridia of earthworm occur in segments a) 3,4 and 5 b) 4,5 and 6 c) 5,6 and 7 d) 6,1 and 8
47	Open circulatory system is not of physiological hindrance in cockroach because a) Heart is simple but chambered b) Blood is colorless c) Excretion occurs through Malpighian tubules d) Circulatory and respiratory systems are not connected
48	Number of eggs contained in an ootheca of cockroach is a) 8 b) 16 c) 32 d) 4
49	Pericardial space in cockroach is regularly altered by muscles a) Ciliary b) Alary

	c) Circular d) longitudinal
50	What type of metamorphosis occurs in cockroach? a) Holometabolous b) Hemimetabolous c) Paurometabolous d) Ametabolous

ANSWER KEY

1	(a)	2	(c)	3	(c)	4	(a)
5	(a)	6	(b)	7	(a)	8	(c)
9	(b)	10	(b)	11	(a)	12	(a)
13	(a)	14	(d)	15	(c)	16	(a)
17	(b)	18	(a)	19	(b)	20	(d)
21	(b)	22	(d)	23	(c)	24	(d)
25	(c)	26	(a)	27	(a)	28	(a)

29	(c)	30	(b)	31	(a)	32	(c)
33	(b)	34	(d)	35	(d)	36	(a)
37	(a)	38	(a)	39	(b)	40	(b)
41	(d)	42	(a)	43	(c)	44	(a)
45	(c)	46	(b)	47	(d)	48	(b)
49	(b)	50	(c)				

Cell The Unit of Life

1. Select the mismatch:

- (1) Gas vacuoles – Green Bacteria
- (2) Large central vacuoles – Animal cells
- (3) Protists – Eukaryotes
- (4) Methanogens – Prokaryotes

2. A cell organelle containing hydrolytic enzymes is

- (1) Lysosome
- (2) Microsome
- (3) Ribosome
- (4) Mesosome

3. Water soluble pigments found in plant cell vacuoles are

- (1) Anthocyanin
- (2) Xanthophyll
- (3) Chlorophyll
- (4) Carotenoids

4. Mitochondria and chloroplast are

- a) Semi-autonomous organelles
- b) Formed by division of the pre-existing organelles and they contain DNA but lack protein synthesizing machinery

Which one of the following options is correct?

- (1) Both (a) and (b) are correct
- (2) Both (a) and (b) are false
- (3) (b) is true but (a) is false
- (4) (a) is true but (b) is false

5. Which of the following structures are not found in prokaryotic cells

- (1) Plasma membrane
- (2) Nuclear envelope
- (3) Ribosome
- (4) Mesosome

6. Which of the following are not membrane bound organelles

- (1) Mesosome
- (2) Vacuoles
- (3) Ribosome
- (4) Lysosome

7. Cellular organelles with membranes are

- (1) Lysosome, Golgi apparatus and mitochondria
- (2) Nuclei, ribosomes and mitochondria
- (3) Chromosomes, ribosomes and ER
- (4) ER, ribosomes and Nuclei

8. Match the columns and identify the correct option

Column I	**Column II**
(a) Thylakoids	(i) Disc shaped sacs of Golgi apparatus
(b) Cristae	(ii) Condensed structure of DNA
(c) Cisternae	(iii) Flat membranous sacs in stroma
(d) Chromatin	(iv) Infoldings in mitochondria

- (1) a(iii), b(iv), c(ii), d(i)
- (2) a(iv), b(iii), c(i), d(ii)
- (3) a(iii), b(iv), c(i), d(ii)
- (4) a(iii), b(1), c(iv), d(ii)

9. Balbiani rings are sites of

- (1) RNA and Protein synthesis
- (2) Lipid synthesis
- (3) Nucleotides synthesis
- (4) Polysaccharide synthesis

10. In photosynthesis, the light independent reactions take place at

- (1) Stomatal matrix

- (2) Thylakoid lumen
- (3) Photosystem I
- (4) Photosystem II

11. Nuclear envelop is a derivative of

- (1) RER
- (2) SER
- (3) Membrane of Golgi complex
- (4) Microtubules

12. Which one of the following is not an inclusion body found in prokaryotes?

- (1) Polysome
- (2) Phosphate granule
- (3) Cyanophycean granule
- (4) Glycogen granule

13. The chromosome in which centromere is located close to one end are

- (1) Sub-metacentric
- (2) Metacentric
- (3) Acrocentric
- (4) Telocentric

14. A somatic cell that has just completed the S-phase of its cell cycle, as compared to gamete of the same species, has

- (1) Four times the number of chromosomes and twice the amount of DNA
- (2) Twice the number of chromosomes and twice the amount of DNA
- (3) Same number of chromosomes and twice the amount of DNA
- (4) Twice the number of chromosomes and 4 times the amount of DNA

15. Which structure performs the function of mitochondria in bacteria

- (1) Nucleoid
- (2) Ribosomes
- (3) Cell wall
- (4) Mesosome

16. Match the following and select the correct answer

Column I	Column II
a. Centriole	(i) Infoldings in mitochondria
b. Chlorophyll	(ii) Thylakoids
c. Cristae	(iii) Nucleic acids
d. Ribozymes	(iv) Basal Bodies, cilia or flagella

- (1) a(iv), b(ii), c(i), d(iii)
- (2) a(i), b(ii), c(iv), d(iii)
- (3) a(i), b(iii), c(ii), d(iv)
- (4) a(iv), b(iii), c(i), d(ii)

17. Golgi complex plays a major role

- (1) In digesting proteins and carbohydrates
- (2) As energy transferring organelle
- (3) In post translational modification of proteins and glycosidation of lipids
- (4) In trapping the light and transforming it into chemical energy

18. Which one of the following does not differ in E. coli and chlamydomonas

- (1) Cell wall
- (2) Cell membrane
- (3) Ribosomes
- (4) Chromosomal organization

19. Select the correct statement from the following regarding cell membrane

- (1) Lipids are arranged in a bilayer with polar heads towards the inner part
- (2) Fluid mosaic model of cell membrane was proposed by Singer and Nicolson
- (3) Na^+ and K^+ move across the cell membrane by passive transport

- (4) Proteins make up 60-70% of the cell membrane

20. What is true about ribosomes

- (1) These are found only in eukaryotic cells
- (2) These are self-splicing introns of some RNAs
- (3) The prokaryotic ribosomes are 80S, where "S" stands for sedimentation coefficient
- (4) These are composed of ribonucleic acid and proteins

21. Ribosomal RNA is actively synthesized in

- (1) Nucleoplasm
- (2) Ribosomes
- (3) Lysosomes
- (4) Nucleolus

22. Important site for the formation of glycoproteins and glycolipids is

- (1) Ribosomes
- (2) Vacuoles
- (3) Golgi apparatus
- (4) Plastids

23. Peptide synthesis inside a cell takes place in

- (1) Ribosomes
- (2) Chloroplasts
- (3) Mitochondria
- (4) Chromoplast

24. In eubacteria, a cellular component that resembles eukaryotic cell is

- (1) Cell wall
- (2) Plasma membrane
- (3) Nucleus
- (4) Ribosomes

25. In mitochondria protons accumulate in the

- (1) Inter membrane space
- (2) Matrix
- (3) Outer membrane
- (4) Inner membrane

26. Which one of the following is not considered as part of endomembrane system

- (1) Vacuole
- (2) Lysosome
- (3) Golgi complex
- (4) Peroxisome

27. The main arena of various types activities of a cell is

- (1) Nucleus
- (2) Plasma membrane
- (3) Mitochondria
- (4) Cytoplasm

28. The plasma membrane consists of mainly

- (1) Proteins embedded in the carbohydrate bilayer
- (2) Phospholipids embedded in protein bilayer
- (3) Proteins embedded in phospholipid layer
- (4) Proteins embedded in a polymer of glucose molecules

29. Which one of the following statements about the particular entity is true?

- (1) Centromere if found in animal cells, which produces ester during cell divisions
- (2) The gene for producing insulin is present in every body cell
- (3) Nucleosome is formed of nucleotides
- (4) DNA consists of a core of 8 Histones

30. Plasmodesmata are

- (1) Locomotory structures
- (2) Membranes connecting the nucleus with plasma lemma
- (3) Connections between adjacent cells
- (4) Lignified cemented layers between the cells

31. Polysome is formed by

- (1) Ribosomes attached to each other in a linear arrangement
- (2) Several ribosomes attached to a single mRNA strand
- (3) Many ribosomes attached to a strand of ER
- (4) A ribosome with several subunits

32. Keeping in view the 'fluid mosaic model' for the structure of cell membrane, which one of the following statements is correct w.r.t. the

movement of lipids and proteins from one lipid monolayer to the other (described as flip-flop movement)?

- (1) Neither lipids nor proteins can flip-flop
- (2) Both lipids and proteins can flip flop
- (3) While lipids can rarely flip flop, proteins cannot
- (4) While proteins can rarely flip flop, lipids cannot

33. Which one of the following is not a constituent of cell membrane

- (1) Phospholipids
- (2) Cholesterol
- (3) Glycolipids
- (4) Proline

34. Select the wrong statement from the following

- (1) The chloroplasts are generally much larger than mitochondria
- (2) Both chloroplast and mitochondria contain an inner and outer membrane
- (3) Both chloroplast and mitochondria have an internal compartment, the thylakoid space bounded by the thylakoid membrane
- (4) Both chloroplast and mitochondria contain DNA

35. Which one of the following statements regarding mitochondrial membrane is not correct?

- (1) The outer membrane is permeable to all kinds of molecules
- (2)The enzymes of the electron transfer chain are embedded in the outer membrane
- (3) The inner membrane is highly convoluted forming a series of inflodings
- (4) The outer membrane resembles a sieve

36. A major breakthrough in the studies of cells came which the development of electron microscope. This is because

- (1) The resolution power of the electron microscope is much higher than that of light microscope
- (2) The resolving power of the electron microscope is 200-350nm as compared to 0.1-0.2 nm for the light microscope
- (3) Electron beam can pass through thick materials whereas light microscopy requires thin sections
- (4) The electron microscope is more powerful than the light microscope as it uses a beam of electrons which has wavelength much longer than that of photons

37. The term “Glycocalyx” is used for

- (1) A layer surrounding the cell wall of bacteria
- (2) A layer present between cell wall and membrane of bacteria
- (3) Cell wall of bacteria
- (4) Bacterial cell genetically engineered to possess N-glycosylated proteins

38. Why is a capsule advantageous to a bacteria?

- (1) It allows the bacterium to attach to the surface
- (2) To protect bacterium from desiccation
- (3) It provides means of locomotion
- (4) It allows bacterium to hide from host’s immune system

39. Which one of the following organisms is not an example of eukaryotic cells

- (1) Amoeba proteus
- (2) Paramoecium caudatium
- (3) Escherichia coli
- (4) Euglena viridis

40. The main organelle involved in modification and routing of newly synthesized proteins to the destination is

- (1) Mitochondria
- (2) ER
- (3) Lysosome
- (4) Chloroplast

41. A student wishes to study the cell structure under a light microscope having 10X eyepieace and 45X objective. He should illuminate the object by which one of the following colours of light so as to get the best possible resolution

- (1) Yellow
- (2) Green
- (3) Blue
- (4) Red

42. Chlorophyll in chloroplasts is located in

- (1) Grana
- (2) Pyrenoid
- (3) Stroma
- (4) Both (1) and (2)

43. Protein synthesis in animal cell occurs

- (1) Only on the ribosomes present in cytosol
- (2) Only ribosomes present in cytoplasm as well as in mitochondria
- (3) Only on ribosomes attached to the nuclear envelope and ER
- (4) On ribosomes present in the nucleolus as well as in cytoplasm

44. According to widely accepted fluid mosaic model cell membranes are semi-fluid where lipids and integral proteins can diffuse randomly. In recent years, this model has been modified in several aspects. In this regard, which one of the following statements is incorrect?

- (1) Proteins in cell membranes can travel within the lipid bilayer
- (2) Proteins can remain confined within certain domains of the membrane
- (3) Proteins can also undergo "Flip-flop movements" in lipid bilayer
- (4) Many proteins remain completely embedded within the lipid bilayer

45. Which of the following statements regarding cilia is not correct

- (1) The organized beating of cilia is controlled by fluxes of Ca^{+} across the membrane
- (2) Cilia are hair-like cellular appendages
- (3) Microtubules of cilia are composed of tubule
- (4) Cilia contain an outer ring of nine doublet microtubules surrounding two single microtubules

46. In germinating seeds fatty acids are degraded exclusively in

- (1) Mitochondria
- (2) Proplastids
- (3) Glyoxysomes
- (4) Peroxisomes

47. The two sub-units of ribosomes remain united ate a critical ion level

- (1) Calcium
- (2) Copper
- (3) Manganese
- (4) Magnesium

48. Which one of the following structures is an organelle with an organelle

- (1) Ribosome

- (2) Peroxisome
- (3) ER
- (4) Mesosome

49. Which one of the following of the cellular parts is correctly described

- (1) Thylakoids – Flattened membranous sacs forming the Grana of Chloroplasts
- (2) Centrioles – Sites of active RNA synthesis
- (3) Ribosomes – those on chloroplasts are larger (80S) while those in cytoplasm are smaller (70S)
- (4) Lysosomes – optimally active at a pH of about 8.5

50. Lamp brush chromosomes are see sin in which typical stage?

- (1) Mitotic metaphase
- (2) Meiotic prophase
- (3) Mitotic anaphase
- (4) Mitotic prophase

ANSWER KEY

1. (2)
2. (1)
3. (1)
4. (4)
5. (2)
6. (3)
7. (1)
8. (3)
9. (1)
10. (1)
11. (1)
12. (1)
13. (3)
14. (4)
15. (4)
16. (1)
17. (3)
18. (2)
19. (2)
20. (4)
21. (4)
22. (3)
23. (1)

24. (2)
25. (1)
26. (4)
27. (4)
28. (3)
29. (2)
30. (3)
31. (2)
32. (3)
33. (4)
34. (3)
35. (2)
36. (1)
37. (1)
38. (4)
39. (3)
40. (2)
41. (3)
42. (1)
43. (2)
44. (3)
45. (1)
46. (3)
47. (4)
48. (1)
49. (1)
50. (2)

Biomolecules

1.Which particular nitrogenous base is present in DNA and not in RNA?:

a)Adenine

b)Thymine

c)Uracil

d)Cytosine

2.Which monomer unit after polymerization forms proteins?:

a)Monosaccharides

b) Nucleotides

c)Fatty acids

d) Amino acids

3.Number of fatty acid residues found in one molecule of fat is:

a)1

b)2

c)3

d)4

4.An enzyme that brings about structural changes of a compound without altering its molecular weight is:

a)Diastase

b)Ligase

c)Lyase

d)Isomerase

5.Which is the most abundant enzyme on the earth?

a)Catalase

b)Invertase

c)Rubisco

d)Nitrogenase

6.An organic substance bound to an enzyme and essential for its activity is called:

a)coenzyme

b)holoenzyme

c)apoenzyme

d)isoenzyme

7.The scientist who coined the term enzyme is:

a)Kuhne

b)Berzilius

c)Bloor

d)Sumner

8.Which of the following does not contain DNA:

a)Sperm

b)Ovum

c)Mature RBCs

d)Chloroplast

9. Cytoskeleton is made up of:

a)Cellulosic microfibrils

b)Proteinaceous filaments

c)Calcium carbonate filaments

d)callose deposits

10. An elaborate network of filamentous proteinaceous structures present in the cytoplasm which helps in the maintenance of cell shape is called:

a)thylakoid

b) endoplasmic reticulum

c)plasmalemma

d)cytoskeleton

11.The plasma memebrane consists mainly of:

a)proteins embedded in a carbohydrate bilayer

b)phospholipids embedded in a protein bilayer

c)proteins embedded in a phospholipid bilayer

d)proteins embedded in a polymer of glucose molecules

ANSWER KEY

1-b
2-d
3-c
4-d
5-c
6-a
7-a
8-c
9-b
10-d
11-c

Cell Cycle and Cell Division

1. Who is the father of cell

a) Robert Hook b)Robert Brown c) Robert Michel d) Lady Robert

2. Who discovered cell

a)Robert Hook b)Robert Brown c) Robert Michel d) Lady Robert

3. What is the test material of Robert Hook

a)Muscle b)Rose c) Corck d) Onion

4. Lysosome contain———enzyme

a)hydrolytic b)rosease c) protease d) Onionase

5. Corck is a

a)muscle b)plant material c) animal material d) All

6. What is the test material of Robert Hook

a)muscle b)rose c) crock d) Onion

7. The cotrolling body of cell is

a)nucleus b)mitochondria c) plastids d) all

8. Photosynthesis take place in

a)chloroplast b)mitochondria c) nucleus d) All

9. A man's body is made up

a)A cell b)many cells c) million of cells d) b & c

10. Who discovered nucleus

a)Robert Hook b)Robert Brown c) Robert Michel d) Lady Robert

11. Chromosome means

a) stained body b) colourless body c) metal body d) plant body

12. Mtochondria responsible for

a) libration of enegy b)excretion c) all d) none

13. Chromosomes are found in

a)nucleus b)both a &c c) ribosome d) golgi apparatus

14. Celldivision occurs in

a)plant only b)both a &c c) animal only d) none

15. Chromosomes helps to

a)maintain character b)both a &c c)inherit character d) none

16. In every organism the chromosome number is

a)constant b)both a &c c) keep on changing d) all

17. Centerosome is absent in

a)plant cell b)both a &d c) all d) animal cell

18. Mitosis occurs in

a)somatic cells b)both a &c c) reproductive cells d) all

19. Which are the among having double membranous structure

a)nucleus b)both a &c c) mitochondria d) all

20. Mitosis occurs in

a)four stages b)five stages c) three stages d) two stages

21. The E R &Ribsome are responsible for

a)protein synthesis b)glycolysis c) respiration d) all

22. Dead organells are digested by

a)nucleus b)both a &c c) ribosome d) lysosome

23. Meiosis occurs mainly in

a)two phases b)only one phase c) three phases d) none

24. Cell division occurs in

a) prokaryotes b)both a &c c)eukaryotes d)all

25. Cell cycle consists of

a)three phases b)both a &c c) two phases d) all

26. In synthesis phases

a)all organelles are synthesized b)both a &c c) the content of cells doubles d) none

27. Cell division is

a)usefull to organism b)both a &c c) harmfull to organism d) all

28. Chloroplast is responsible for

a)synthesis of food b)both a &c c) synthesis of energy d) none

29. Spindle fibers are produced at the time of

a)cell division b)both a &c c) food production d)protein synthesis

30. Vacuoles are bigger in

a) anima cell b)both a &c c)plant cell d)all

31. Cell division occurs in

a) prokaryotes b)both a &c c)eukaryotes d)all

32. Semipermeable membrane is

a) cell membrane b)both a &c c)nuclear membrane d)all

33. Where is the nucleus found in plant cell

a) middle of the cell b)both a &c c)corner of the cell d)all

34. Crossing over occurs in

a) mitosis b)both a &c c)meiosis d)all

35. Meiosis Cell division occurs in

a) five stages b)both a &c c)four stages d)all

36. Both male gamete and female gamete having

a)Odd number of chromosomes b)both a &c c)even number of chromosomes d)all

37. Which are the stages of Cell division same

a) metaphase of mitosis and metaphase of meiosis II b)both a &c c)metaphase of mitosisand anaphase of meiosis II d)all

38. Cell theory proposed by

a) Schleiden& Schwann b)Melvicalvin c)Jenner d)all

39. Prokaryotic cell having

a) linear DNA b)circular DNA c)no DNA d)all

40. Who found the ribosome first in plant cell

a)Embbden b)both a &c c)all d)Robinson and brown

41. Oxysomes are found in

a)Nucleus b)plastids c)Mitochondria d)all

42. Which chromosomes actively take part in transcription

a)Euchromatin b) Heterochromatin c)both a&b d)none

43. Name the enzyme present in the nucleus

a)Euchromatinase b) Heterochromatinase c)DAN & RNA polymerase d)none

44. Which type of ribosome found in eukaryotes

a) 70S b)both a &c c)80S d)50S

45. Who coined the word cytoplasm

a)strassburger b)both a &c c)Robert Hook d)Strassberger

46. Name the largest plant cell

a) Acetabularia b)both a &c c)Parenchyma d)all

47. The result of meiosis is

a) formation of haploid cell b)both a &c c)diploid d)all

48. Meiosis II look like a) mitosis b)both a &c c)protein synthesis d)none
49. Which cell division occurs first A) cytokinesis b)both a &c c)karyokinesis d)all
50. The advantage of meiosis is a) occurrence of variation b)no variation occurs c)no effect d)all

ANSWER KEY

1	a)Robert Hook
2	a)Robert Hook
3	c) corck
4	a)hydrolytic
5	b)plant material
6	c) corck
7	a)nucleus
8	a)chloroplast

9	c) million of cells
10	b)Robert Brown
11	a)stained body
12	a)liberation of energy
13	a)nucleus
14	b)both a &c
15	b)both a &c
16	a)constant
17	a)plant cell
18	a)somatic cells
19	d) all
20	a)four stages
21	a)protein synthesis
22	d) lysosome

23	a)two phases
24	d)all
25	a)three phases
26	c) the content of cells doubles
27	a)usefull to organisms
28	a)synthesis of food
29	a)cell division
30	c)plant cell
31	d)all
32	a) cell membrane
33	c)corner of the cell
34	c)meiosis
35	a) five stages
36	a) Odd number of chromosomes

37	A) metaphase of mitosis and metaphase of meiosis II
38	A) Schleiden& Schwann
39	b)circular DNA
40	d)Robinson and brown
41	C(mitochondria
42	b)euchromain
43	c)DAN & RNA polymerase
44	80S
45	a)Strassbuger
46	a)Actetabularia
47	A) formation of haploid cell
48	A) mitosis
49	A) ctokinesis
50	A) occurrence of varlation

Transport in Plants

1. The pressure at which the entry of water across the semipermeable membrane stops is called _____

a) Turgor pressure

b) Root pressure

c) Osmotic pressure

d) Diffusion pressure

Answer: c

2. A _____ force exists between the walls of xylem vessels and water

a) Cohesion

b) Adhesive

c) Gravitational

d) Transpirational pull

Answer: b

3. The pathway of the movement of water through cell wall is called as _____

a) Symplastic pathway

b) Apoplastic pathway

c) Vacuolar pathway

d) Plasmodesmata pathway

Answer: b

4. The value of osmotic pressure depends on _____
a) Concentration of solute

b) Concentration of solvent

c) Concentration of solution

d) All of the above.

Answer: a

5. In older dying leaves to younger leaves the minerals are carried as ____
a) Inorganic compound

b) Organic compound

c) Ionic forms

d) All of the above.

Answer: b

6. When a cell is placed in 0.50 M concentrated sugar solution, there is no change in it. So the external solution is called _____
a) Hypertonic

b) Hypotonic

c) Isotonic

d) Colloidal

Answer: c

7. In a hypertonic solution a cell's water potential _____
a) Decreases

b) Increases

c) First increases then decreases

d) No change

Answer: a

8. Which one of the following will not directly affect transpiration?

a) Temperature

b) Light

c) Wind speed

d) Chlorophyll content in leaves

Answer: d

9. Two cells are contiguous. Cell a has osmotic pressure 10atm., turgor pressure 7 atm and diffusion pressure deficit 3 atm. Cell B has osmotic pressure 8 atm.,turgor pressure 3 atm and diffusion pressure deficit 5 atm. The result will be

a) No movement of water

b) Equilibrium between the two

c) Movement of water from cell A to B

d) Movement of water from cell B to A

Answer: d

10. A cell devoid of cell wall will burst if immersed in

a) Hypertonic solution

b) Hypotonic solution

c) Isotonic solution

d) All of the above.

Answer:b

11. Absorption of water by roots is increased when
a) Transpiration is increased

b) Transpiration is decreased

c) Photosynthesis is increased

d) Photosynthesis is increased

Answer: a

12. “Osmosis is the diffusion of a solution of a weaker concentration into a solution of a higher concentration when both are separated by a semi permeable membrane”. What is the error in this statement?
a) The exact concentration is not indicated

b) There is no mention of DPD

c) The movement of water molecule is not specified

d) The behaviour of semi permeable membrane is not specified

Answer: c

13. When a cell is fully turgid which of the following will be zero?
a) Turgor pressure

b) Wall pressure

c) Osmotic pressure

d) DPD

Answer: d

14. Which of the following changes in the cell sap of the guard cells is responsible for keeping the stomata open during day time?
a) Increase in osmotic pressure but decrease in turgor pressure

b) Decrease in osmotic pressure but increase in turgor pressure

c) Increase in both osmotic pressure and turgor pressure

d) Decrease in both osmotic pressure and turgor pressure

Answer: b

15. Root pressure is maximum when
a) Transpiration is high and absorption is very low

b) Transpiration is very low and absorption is high

c) Both transpiration and photosynthesis is very high

d) Both transpiration and photosynthesis is low

Answer: b

16. Which of the following growth hormone is associated with stomatal movements?
a) Auxin

b) Gibberellins

c) Abscissic acid

d) Cytokinins

Answer: c

17. A field is generally watered in sufficient amounts water after the application of fertilizers to prevent _____
a) Plasmolysis

b) Deplasmolysis

c) Osmosis

d) Diffusion

Answer: a

18. Which one of the following is ***not*** a characteristic of active transport?
a) Highly selective

b) Transport solutes

c) Uphill transport

d) Insensitive to inhibitors

Answer: d

19. Path of water movement from soil to xylem is
a) Soil – root hair- cortex-pericycle- endodermis- metaxylem-protoxylem

b) Soil – root hair-cortex-endodermis-pericycle- protoxylem-metaxylem

c) Soil- root hair-epidermis-phloem-xylem

d) Soil- root hair- epidermis-cortex-xylem- phloem

Answer: b

20. Stomatal opening is under the control of _____
a) Epidermal cells

b) Subsidiary cells

c) Guard cells

d) Mesophyll cells.

Answer: c

21. Ascent of sap is _____
a) Upward movement of organic matter in plants

b) Downward movement of organic matter in plants

c) Downward movement of water in plants

d) Upward movement of water in plants

Answer: d

22. Hydathodes are associated with _____
a) Guttation

b) Transpiration

c) Respiration

d) Transportation

Answer: a

23. The process of guttation takes place when _____

a) The root pressure is high and the rate of transpiration is low

b) The root pressure is low and the rate of transpiration is high

c) The root pressure equals the rate of transpiration

d) The root pressure as well as the rate of transpiration is high

Answer: a

24. The element involved in the opening and closing of stomata is

a) Chlorine

b) Sodium

c) Potassium

d) Calcium

Answer: c

25. Phloem sap is mainly made of _____

a) Water and sucrose

b) Water and glucose

c) Water and starch

d) Water and fructose

Answer: a

26. The following type of guard cells are found in _____

a) Dicots

b) Monocots

c) Gymnosperms

d) Ferns

Answer: b

27. Which one of the following is a driving force for the process of passive absorption of water in roots?

a) Activity of aquaporins

b) Increase in imbibition pressure in root cells

c) Root pressure

d) Transpiration pull

Answer: d

28. Which elements are readily mobilized in plants?

a) S,N,Mo

b) S,N,P

c) S,N,B

d) S,Mn,Mo

Answer: b

29. Stomatal frequency indicates _____

a) Rate of gaseous exchange

b) Rate of water loss

c) Number of stomatal aperture

d) Number of stomata per unit area.

Answer: d

30. The ability of water to resist a pulling force is known as _____
a) Tensile strength

b) Surface tension

c) Cohesion

d) Capillarity

Answer: a

31. In dorsiventral leaf, the number of stomata per unit area are generally
a) Same on both surfaces

b) More on lower surface

c) More on upper surface

d) Absent in upper surface

Answer: b

32. In an isobilateral leaf the number of stomata per unit area is
a) More on lower surface

b) More on upper surface

c) Same on both surfaces

d) Absent in upper surface

Answer: c

33. Water in plants is transported by or ascent of sap takes place through
a) Root pressure

b) Transpiration pull

c) Diffusion pressure deficit

d) Turgor pressure

Answer: c

34. Which ones do not show transpiration?
a) Aquatic plants with floating leaves

b) Aquatic submerged plants

c) Plants growing in hilly areas

d) Plants living in deserts

Answer: b

35. Which of the following statements is ***not*** true?
a) The Apoplastic movement of water occurs exclusively through the cell wall without crossing any membrane

b) Solute present in any cell increase the free energy of water or water potential

c) The symplastic pathway occurs from cell to cell through plasmodesmata

d) Membrane permeability depends on the membrane composition as well as the chemical nature of the solute.

Answer: b

36. Which one of the following these is *not* related to guttation
a) Water is given out in the form of droplets

b) Water given out is impure

c) Water is given out during night time

d) Guttation is of universal occurrence

Answer: d

37. Which of the following is not purpose of transpiration?

a) Supplies water for photosynthesis

b) Maintains shape and structure of plants.

c) Helps in translocation of sugar from source to sink

d) Transports minerals from the soil to all parts of plants.

Answer: c

38. Cobalt chloride is blue in dry state .In contact with moisture it turns into

a) Red

b) Orange

c) Pink

d) Purple

Answer: c

39. If a cell gets reduced in size when placed in a solution, the solution is

a) Isotonic

b) Hypotonic

c) Hypertonic

d) Heterotonic

Answer: c

40. A cell placed in strong salt solution will shrink because
a) Cytoplasm will disintegrate

b) Cell wall gets broken due to mineral salts

c) Salt water enters the cell

d) Water comes out by Exosmosis

Answer: d

41. Wilting in plants occurs when
a) Phloem is blocked

b) Xylem is blocked

c) Cortical cells are blocked

d) Pith is removed

Answer: b

Mineral Nutrition

Q1) Nitrogen is an important constituent of … …
a) Polyphosphates
b) Carbohydrates
c) Proteins
d) Lipids

Q2) Match the column….

a) Aerobic	1. Frankia
b) Cyanobacteria	2.Azospirillum
c) Casuarina	3.Clostridium
d) Tropical grasses	4. Aulosira

a) a – 4, b – 3, c – 2, d – 1
b) a – 5, b – 3, c – 4, d – 1
c) a – 5, b – 4, c – 1, d – 2
d) a – 3, b – 5, c – 4, d – 2

Q3) Element required in least quantity is … …
a) Zn
b) Mn
c) Mo
d) Cl

Q4) Function of red pigment leghaemoglobin present in root nodules of legumnious plants is to regulate …
a) CO2 supply in cells
b) Mo supply to cells
c) O2 supply to cells
d) Production of phenolic compounds

Q5) Essential macronutrients are … …..
a) Manufactured during photosynthesis
b) Produced by growth hormoes

c) Absorbed from soil
d) Produced by enzymes

Q6) Gene responsible for nitrogen fixation is … …
a) Nif
b) Nitrogenase
c) Yeast alanine tRNA synthetase
d) RNA synthetase

Q7) An essential element is that which …

a) Is found in plant ash
b) Is availanle in soil
c) Improves health of plants
d) Is irreplaceable and indispensable for growth of plants

Q8) Denitrification is carried out by ….
a) Nitrosomonas
b) Nitrosocccus
c) Nitrobacter
d) Pseudomonas

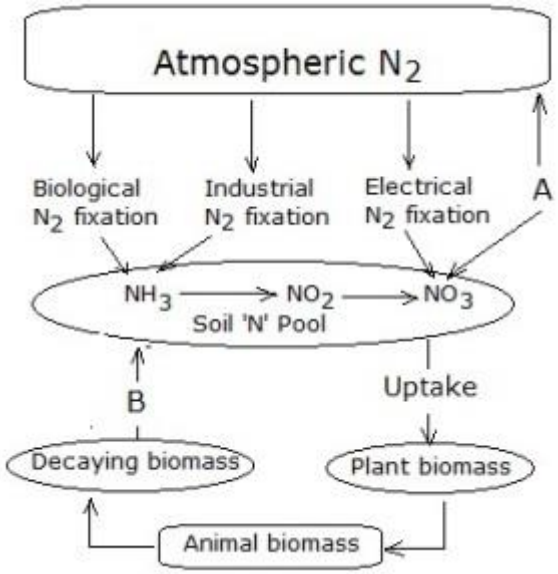
Q9) Plants absorb nitrogen as …

a) Nitrate
b) Nitrite
c) Ammonia and Urea
d) All the above

Q10) Function of leghaemoglobin during biological nitrogen fixation in root nodules of legumes is to ….
a) Convert atmospheric nitrogen to ammonia
b) Convert ammonia to nitrite
c) Transport oxygen for activity of nitrogenase
d) Protect nitrogenase from oxygen

Q11) Active transport occurs … ….
a) Against concentration gradient and requires ATP
b) Against concentration gradient but does not require ATP
c) Along concentration gradient but requires ATP
d) Along concentration gradient but does not require ATP

Q12) In the given diagram A and B represent …



a) Mineralisation, Dmineralisation
b) Ammonification, Denitrification
c) Denitrification, Ammonification
d) Dentrification, Mineralisation

Q13) Element which is a component of proteinaceous materials and protoplasm is … …
a) Potassium
b) Nitrogen
c) Magnesium
d) Oxygen

Q14) Minerals are absorbed in the form of … …
a) Molecules
b) Ions
c) Compounds
d) Mixtures

Q15) Active and passive transports across cell membrane differ in … ….
a) Passive transport in non-selective
b) Passive transport is along the concentration gradient while active transport is due to metabolic energy
c) Active transport is more rapid
d) Passive transport is confined to anions while active transport in confined to cations

Q16) Assertion: Nitrogen fixing bacteria of legume root nodules survive in oxygen depleted cells.
Reason: Leghaemoglobin completely removes oxygen from nodule cells. …
a) If both the assertion and reason are true and reason explains the assertion.
b) If both the assertion and reason are true but reason does not explain the assertion
c) If assertion is true but reason is false
d) If assertion is false but reason is true.

Q17) Plant ash indicates … …..
a) Organic matter of plant
b) Mineral salt absorbed by plants
c) Both mineral salts nad organic matter
d) Silica absorbed by plants

Q18) Nitrifying bacteria convert … ….
a) Nitrate to nitrogen
b) Ammonia to nitrogen
c) Nitrogen into soluble form
d) Ammonia to nitrate

Q19) The enzymes required for nitrogen fixation is …. …
a) Nitrogen deaminase
b) Nitrodioxidase
c) Amino acid decarboxylase
d) Nitrogenase

Q20) Which group of three micronutrient elements affect both photosynthestic nad mitochondrial electron transport? … …
a) Cu, Mn, Fe
b) Co, Ni, Mo
c) Ca, K, Na
d) Mn, Co, Ca

Q21) Inorganic nutrients are present in the soil as … …
a) Molecules
b) Atoms
c) Electrically charged ions
d) Colloids

Q22) Yield of Rice increaes by …. …
a) Sesbania
b) Anabaena
c) Bacillus subtilis
d) B. popillae

Q23) Which one is not a micronutrient? … …
a) Mo
b) B
c) Mg
d) Zn

Q24) Bacteria that convert ammonia to nitrite belong to … …
a) Nitrobacter
b) Nitrosomonas

c) Pseudomonas
d) Mycobacterium

Q25) Brown heart disease is due to deficiency of …
a) Iron
b) Boron
c) Potassium
d) Molybdenum

Q26) Assertion: Deficiency of suphur causes chlorosis in plants
Reason: Sulphur is constituent of chlorophyll, proteins and nucleic acid … ….
a) If both the assertion and reason are true and reason explains the assertion.
b) If both the assertion and reason are true but reason does not explain the assertion
c) If assertion is true but reason is false
d) If assertion is false but reason is true.

Q27) Which of the following is macronutrient … …
a) Ca
b) Mo
c) Mn
d) Zn

Q28) Free living bacteria that can fix N2 in soil are … …
a) Azotobacter
b) Beijerinckia
c) Clostridium
d) All the above

Q29) Die back shoots is due to … …
a) Mn
b) Mo
c) B
d) Cu

Q30) Which one is essential for root growth? … …
a) Zn
b) Ca
c) Mo
d) S

Q31) Exanthema is a result of deficiency of …. …
a) Cu
b) Na
c) P
d) Na

Q32) A primary deficiency is caused by insufficient absorption of …. …..
a) Magnesium
b) Manganese
c) Calcium
d) Potassium

Q33) Chlorosis is caused by deficiency of … ….
a) Iron
b) Calcium
c) Copper
d) Boron

Q34) Assume that an actively respiring cell has 3X number of K+ in its cytoplasm and 2X number of K+ outside. After some time X number of K+enter the cell. What is the process by which K+ transport has taken place … …
a) Primary active transport
b) Secondary active transport
c) Passive transport
d) Diffusion

Q35) A crop plant which can grow in nitrogen deficient soils without external supply of it is … ….
a) Allium sativum
b) Gossypium herbaceum
c) Cajanus cajan
d) Helianthus annus

Q36) Azolla has a symbiotic relationship with … …
a) Chlorella
b) Anabaena
c) Nostoc
d) Tolypothrix

Q37) Sulphur is an important nutrient for optimum growth and productivity in …. ….
a) Oilseed crops
b) Pulse crops
c) Cereals
d) Fibre crops

Q38) One mineral activates enzyme catalase and other is constituent of chlorophyll. They are respectively …. …
a) Iron and Magnesium
b) Iron and Manganese
c) Magnesium amd Manganese
d) Calcium and Magnesium

Q39) Non-symbiotic nitrogen fixing prokaryote is … ….
a) Rhizobium
b) Nostoc
c) Frankia
d) Azobacter

Q40) Soil nitrate is more likely to leach than ammonium due to its …. ……
a) Small size
b) Negative charge
c) Being useless to soil flora
d) Abundance

Q41) Magnesium is an important component of … …
a) Haemoglobin
b) Florigen
c) Enzymes
d) Chlorophyll

Q42) Which is incorrect about ion channels … ….
a) They are proteins
b) All ions pass through same channel
c) Movement through them is simple diffusion
d) Movement through them is from high to low concentration

Q43) Element which is a component of proteinaceous materials and protoplasm is … ….
a) Potassium
b) Nitrogen
c) Magnesium
d) Oxygen

Q44) Micronutrients/trace elements are those that … ….
a) Can be removed from the plant without any effect on it
b) Play a minor role in plant nutrition
c) Form very small molecules in plants
d) Are present/required in small quantities in plants

Q45) Nitrogen fixing enzyme found in root nodules is … ….
a) Nitrogen estrase
b) Nitrogenase
c) Nitrase
d) Nitrosomonas

Q46) Boron assists in … ..
a) Activation of enzymes
b) Photosynthesis

c) Sugar transport
d) Acting as enzyme cofactor

Q47) Which of the following is a macronutrient …. ….
a) Mo
b) Mg
c) Mn
d) Zn

Q48) An immobile element in plants is … …
a) Calcium
b) Potassium
c) Phosphorus
d) Nitrogen

Q49) Which combination of micro and macronutrients is correct … …
a) Cu, Fe, K, P, ; B, Zn, Mo, N
b) Cu, K, P, B ; Fe, N, Mo, Ca
c) Cu, Zn, B, Mo; N, P, K, S
d) B, Fe, K, Zn ; P, K, Mn nad Mo

Q50) Micronutrients are …. ….
a) Mn, Ni, Zn
b) Mg, Mn, Mo
c) Cu, B, O
d) Ca, S, Fe

ANSWER KEY

No	Answers	No	Answers	No	Answers	No	Answers
1	C	15	B	29	D	43	B
2	C	16	C	30	B	44	D
3	C	17	B	31	A	45	B
4	C	18	D	32	D	46	C

5	C	19	D	33	A	47	B
6	A	20	A	34	B	48	A
7	D	21	C	35	C	49	C
8	D	22	B	36	B	50	A
9	D	23	C	37	B		
10	D	24	B	38	A		
11	A	25	B	39	D		
12	C	26	C	40	B		
13	B	27	A	41	D		
14	B	28	D	42	B		

Photosynthesis in Higher Plants

1. For photosynthesis (i.e. for the synthesis of organic matter), the green plants need only .

(a) Light

(b) Chlorophyll

(c) CO_2

(d) All of these

2. For synthesis of a molecule of glucose, the requirement of ATP and NADPH is respectively

(a) 15 and 10

(b) 33 and 22

(c) 12 and 8

(d) 18 and 12

3. Formation of ATP in photosynthesis and respiration is an oxidation process which utilizes the energy from

(a) Cytochromes

(b) Ferredoxin

(c) Electrons

(d) Carbon dioxide

4. Grana refer to

(a) Stacks of thylakoids in plastids of higher plants

(b) A constant in quantum equation

(c) Glycolysis of glucose

(d) By-product of photosynthesis

5. Greatest producers of organic matter are

(a) Crop plants

(b) Forests

(c) Plants of the land area

(d) Phytoplankton of oceans

6. Hill's reaction takes place in

(a) Dark

(b) Light

(c) Dark and light both

(d) At any time

7. How many Calvin cycles form one hexose molecule

(a) 2

(b) 6

(c) 4

(d) 8

8. In a electron transport chain in terminal oxidation the cytochrome which donates electrons to O2 is

(a) Cytochrome b

(b) Cytochrome c

(c) Cytochrome a3

(d) Cytochrome a

9. In bacterial photosynthesis, the hydrogen donor is

(a) H_2O

(b) H_2SO_4

(c) NH_3

(d) H_2S

10. In blue-green algae photosystem-II contain an important pigment concerned with photolysis of water it is called

(a) B earotene

(b) Chlorophyll' b'

(c) Cytochrome 'c'

(d) Phycocyanin

11. In C3 plants first stable product of photosynthesis during dark reactions is

(a) PGA

(b) PGAL

(c) RuBP

(d) Oxalo acetic acid

12. In C4 pathway or C4 photosynthesis carbobn dioxide fication occures in chloroplast of

(a) Palisade tissue

(b) Spongy mesophyll

(c) Bundle sheath

(d) Guard cells

13. In C4 plants, Calvin cycle operates in

(a) Stroma of bundle sheath chloroplasts

(b) Grana of Bundle sheath chloroplasts

(c) Grana of mesophyll chloroplasts

(d) Stroma od mesophyll chloraplasts

14. In C4 plants, initial carbondioxide fixation occurs on chloroplasts of

(a) Palisade tissue

(b) Spongy parnchyma

(c) Guard cells

(d) Hypodermis and chlorenchyma

15. In C4 plants, synthesis of sugars/ final CO2 fixation occurs in

(a) Palisade cells

(b) Spongy cells

(c) Undifferentiated mesophyll cells

(d) Bundle sheath cells

16. In case of C4 pathway

(a) CO_2 combines with PGA

(b) CO_2 combines with PEP

(c) CO_2 first combines with RuBP

(d) CO_2 combines with RMP

17. In chlorophyll 'a', third carbon of second pyroll ring is attached with

(a) Carboxyl group

(b) Magnesium

(c) Methyl group

(d) Aldehyde group

18. In normal chloroplast, the percentage of chlorophyll is

(a) 50%

(b) 75%

(c) 5-10%

(d) 95%

19. In photosynthesis, oxygen is liberated due to

(a) Reduction of carbon dioxide

(b) Hydrolysis os carbohydrate

(c) Photolysis of water

(d) Breakdown of chlorophyll

20. In pigment system II, active chlorophyll is

(a) P680

(b) P700

(c) P673

(d) P720

21. In which of the following the rate of photosynthesis is decreased and is known as red drop

(a) Blue light

(b) Green light

(c) Red light more than 680 nm

(d) Red light less than 680 nm

22. Intact chloroplast from green leaves cab be isolated by

(a) Acetone

(b) Ethanol

(c) Alcohol

(d) Sugar solution

23. Isotopes employed to study photosynthesis are

(a) 11C and 32P

(b) 15C and 32P

(c) 16C and 15O

(d) 14C and 18O

24. Isotopes popularly known to have been used in the study of photosynthesis are

(a) C14 and O18

(b) C11 and C32

(c) C16 and N15

(d) P32 and C15

25. Kranz anatomy is typical of

(a) C4 plants

(b) C3 plants

(c) C2 plants

(d) CAM plants

26. Light energy is conveted into chemical energy in the presence of

(a) Pyrenoids

(b) Chloroplasts

(c) Ribosomes

(d) Mesosomes

27. Light is necessary during photosynthesis for

(a) Evolution of hydrogen

(b) Photolysis of water

(c) Heating

(d) Breakdown of chlorophyll

28. Maize, sugarcane and some other tropical plants have high efficiency of CO_2 fixation because they operate

(a) Calvin cycle

(b) Hatch – Slack cycle

(c) TCA cycle

(d) PP pathway

29. Make suitable pair

(A) Emerson effect – (a) C4 cycle

(B) Hill reaction – (b) Photolysis

(C) Calvin's cycle – (c) C3 cycle

(D) Hatch and Slack cycle – (d) Photosystem-I & II

(a) Aa, Bb, Cc, Dd

(b) Aa, Bc, Cd Da

(c) Ac, Bd, Ca, Db

(d) Ad, Bb, Cc, Da

30. Most effective wavelength of light for photosynthesis is

(a) green

(b) Violet

(c) Red

(d) Yellow

31.NADP is reduced to NADPH in

(a) PSI

(b) PSII

(c) Calvin cycle

(d) Noncyclic photophosphorylation

32.Nine-tenth of all photosynthesis of world (85-90%) is carried out by

(a) Large trees with millions of branches and levess

(b) Algae of the ocean

(c) Chlorophyll containing ferns of the forest

(d) Scientist in the laboratories

33.Nobel prize was awarded to the scientist for discovering the pathway of carbon assimilation

(a) Watson

(b) Krebs

(c) Calvin

(d) Parnas

34.Number of calvin cycles required to generate a molecule of hexose is

(a) 2

(b) 4

(c) 6

(d) 8

35.One sixth part of the total PGAL produced is used for synthesis of

(a) Glucose

(b) RuBP

(c) RuMP

(d) DHAP

36.Oxidative phosphorylation occurs during the process of

(a) Protein synthesis

(b) N2 fixation

(c) Respiration

(d) Transpiration

37.Oxygen containing carotenoids are

(a) Carotenes

(b) Xanthophylls

(c) Phycobilins

(d) Anthocyanins

38.Oxygen liberated during photosynthesis comes from

(a) CO_2

(b) Glucose

(c) H_2O

(d) Fructose

39.P700 is a special from of which pigment

(a) Chlorophyll-b

(b) Carotenes

(c) Chlorophyll-a

(d) Phycobilins

40.Path of dark reaction of photosynthesis was traced through the use of

(a) ^{32}P

(b) $^{14}CO_2$

(c) $^{18}O_2$

(d) X-rays

41.In the calvin cycle, the assimilatory power is used during

(A) Formation of PGA

(B) Conversion of PGA to PGAL

(C) Formation of fructose 1-6 diphsophate from PGAL

(D) Formation of glucose from fructose – di- phosphate

42.Unidirectional flow of e- in non-cyclic photophosphorylation is

(A) PS II — e- —> PS I — e- —> NADP — e- —> water

(B) Water — e- —> PSII — e- —> PS I — e- —> NADP

(C) PS I — e- —> NADP — e- —> water — e- —> PS II

(D) Water — e- —> PS I — e- —> PS II — e- —> NADP

43.Which is sensitive to longer wavelength of light?

(A) Photolysis

(B) PSI

(C) PS II

(D) Photophosphorylation

44.Phytol tail is present at

(A) 3rd carbon of IInd ring

(B) 2nd carbon of IIIrd ring

(C) 7th carbon of IVth ring

(D) 3rd carbon of IVth ring

45.Reduction of co-enzyme NADP depends on

(A) Reduction of CO2

(B) Evolution of O2

(C) Photolysis of water

(D) Formation of ATP

46. Loculus is the internal space of

(A) Grana

(B) Stroma

(C) Thylakoid

(D) Quantasome

47. Calvins cycle involves

(A) Oxidative phosphorylation

(B) Oxidative carboxylation

(C) Reductive carboxylation

(D) Reductive phophorylation

48. In C4 plants, carboxylation is twice, it can be represented as

(A) Pyruvic acid + CO2 malic acid + CO2

(B) RUDP + CO2 and pyruvic acid + CO2

(C) PEPA + CO2 and RUDP + CO2

(D) PEPA + CO2 and malic acid + CO2

49. In non-cyclic photophosphorylation, all the participants acts as electron donor and acceptor except

(A) Chl-a of PS I

(B) Chl-a of PS II

(C) NADP

(D) Both (A) and (B)

50. Which of the following protist is a photoautotroph

(A) Thiobacillus

(B) Ferrobacillus

(C) Diatoms

(D) Chlorobium

ANSWERS

1. Answer: (d)
2. Answer: (d)
3. Answer: (c)
4. Answer: (a)
5. Answer: (d)
6. Answer: (b)
7. Answer: (b)
8. Answer: (c)
9. Answer: (d)
10. Answer: (d)
11. Answer: (a)
12. Answer: (b)
13. Answer: (a)
14. Answer: (b)
15. Answer: (d)
16. Answer: (b)
17. Answer: (c)
18. Answer: (c)
19. Answer: (c)
20. Answer: (a)
21. Answer: (c)
22. Answer: (a)
23. Answer: (d)

24. Answer: (a)
25. Answer: (a)
26. Answer: (b)
27. Answer: (b)
28. Answer: (b)
29. Answer: (d)
30. Answer: (c)
31. Answer: (d)
32. Answer: (b)
33. Answer: (c)
34. Answer: (c)
35. Answer: (a)
36. Answer: (b)
37. Answer: (b)
38. Answer: (c)
39. Answer: (c)
40. Answer: (b)
41. Answer: (B)
42. Answer: (B)
43. Answer: (B)
44. Answer: (C)
45. Answer: (C)
46. Answer: (C)
47. Answer: (C)
48. Answer: (C)
49. Answer: (C)
50. Answer: (C)

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Respiration in Plants

1. The ultimate electron acceptor in an aerobic respiraton is:

a) Oxygen

b) Cytochrome

c) Hydrogen

d) Glucose

2. Phosphrylation of glucose during glycolysis is catalysed by :

a) Phosphoglucomutase

b) Phosphoglucoisomerase

c) Hexokinase

d) Phosphorylase

3. Pyruvic acid the key product of glycolysis has many fates; what are its products during aerobic respiration.

a) Lactic acid

b) $CO_2 + H_2O$

c) Acetyl CO A + H_2O

d) Ethanol + CO_2

4. Electron transport chain (ETS) is located in mitochondrial:

a) Outer membrane

b) intermembranal space

c) Inner membrane

d) matrix

5. Which of the following has highest rate of photosynthesis:

a) Leaf bud

b) Growing shoot apex

c) Root tip

d) Growing root tip

6. Mitochondria is called the powerhouse of cell because:

a) It has mitochondral enzyme for kreb's cycle and cytochromes.

b) It produces ATP as energy store house.

c) It is found in all plant and animal cell

d) It has double membrane.

7. The end product of oxidative phosphorylation is:

a) NADPH

b) Oxygen

c) ADP

d) ATP + H_2O

8. Match of the two columns are given below,which one is the correct match:

COLUMN A		COLUMN B	
A	MOLECULAR OXYGEN	I	α-KETOGLUTARIC ACID
B	ELECTRON ACCEPTOR	Ii	HYDROGEN ACCEPTOR
C	PYRUVATE DEHDROGENASE	Iii	CYTOCHROME
D	DECARXYLATION	iv	ACETYL COA

a) A-ii,B-iii,C-iv,D-i

b) A-iii,B-iv,C-ii,D-i

c) A-ii,B-i,C-iii,D-iv

d) A-iv,B-iii,C-i,D-ii

9. Respiratry quotient of FATS is :

a) equal to 1

b) more than 1

c) less than 1

d) none of the above.

10. Red muscle fibre are red due to the presence of:

a) haemoglobin

b) myoglobin

c) megaloglobin

d) rich no. of RBC

11. Nature of TCA cycle is:

a) Catabolic

b) Metabolic

c) Amphibolic

d) Anabolic

12. The number of glucose molecule required to produce 38 ATP molecules under anaerobic condition by a yeast cell is:

a) 2

b) 4

c) 19

d) 38

13. Which of the following does not function as an electron carrier?

a) Coenzyme-Q

b) Cytochrome-a

c) Cytochrome-C

d) H2O

14. The process used to convert pyruvate to acetyl CoA is

a) Oxidative dehydration

b) Oxidative decarboxylation

c) Oxidative dehydrgenation

d) Oxidative dephosphorylation

15. Which of the following plant part can respire anaerobically:

a) Root

b) Seed

c) Stem

d) leaves

16. How many ATP molecules could maximally generated from one molecule of glucose,if the complete oxidatin of one mole of glucose to CO_2 and H_2O yields 686 kcal and the useful chemical energy available in the high energy phosphate bond of one mole of ATP is 12 kcal ?

a) One

b) Two

c) Thirty

d) Fifty seven

17. All enzymes of TCA cycle are located in the mitochondrial matrix except one which is located in the inner mitochondrial membrane in the eukaryotes and in the cytosol in prokaryotes. This enzyme is :

a) isocitrate dehydrogenase

b) Malate dehydrogenase

c) Sucinnic dehydrogenase

d) Lactate dehydrogenase

18. The overall aim of glycolysis, Kreb's cycle and ETS is:

a) production of ATP on large scale

b) Nucleic acid

c) Sugars

d) production of ATP in small stepwise units.

19. The net gain of ATP during glycolysis is:

a) Six

b) Two

c) Eight

d) Four

20. Which one is not correct about Kreb's cycle?

a) It is also called citric acid cycle.

b) The intermediate compound which link kreb's cycle and glycolysis is Malic acid.

c) It occurs in mitochondria

d) It starts with six carbon compound

21. In which of the following steps of Kreb's cycle CO_2 is evovled?

a) Isociric acid / Oxalosuccinic acid

b) Oxalo succinic acid / α-Ketogluteric acid

c) succinic acid / Fumaric acid

d) Malic acid / Oxaloacetic acid

22.Which of the following enzyme is not used in Kreb's cycle?

a) Aconitase

b) Decarboxylase

c) Aldolase

d) Fumarase

23. The end products of fermentation are:

a) ATP

b) Ethanol+ CO_2 + ATP

c) Ethyl alcohol + H_2O+ CO_2 + ATP

d) Pyruvic acid + CO_2

24. Anaerobic respiration in muscles give rise to the following:

a) $C_3H_6O_3$

b) CH_3COOH

c) C_2H_5OH

d) $CH_3COCOOH$

25. RQ (Respiratory quotient) is defined as :

a) Volume of CO_2 evolved = Volume of O_2 consumed

b) Volume of CO_2 consumed / Volume of O_2 evolved

c) Volume of CO_2 evolved / Volume of O_2 consumed

d) Volume of O2 evolved / Volume of CO2 consumed

26. In which of the following CO2 is not evolved:

a) Aerobic resoiration in plants

b) Aerobic respiration in animals

c) Alcoholic fermentation

d) Lactate fermentation

27. The three boxes in this diagram represents the three major biosynthetic Pathway s in aerobic Respiration:

a) ATPArrows represent net reactants and products, Arrows no. 4, 8 and 12 are :

b) H2O

c) FADH2 OR FAD+

d) NADH

28. Mitochondria are semi-autonomous because as they posses:

a) DNA

b) DNA + RNA

c) DNA + RNA ribosome

d) Protein

29. FAD is the electron acceptor in between :

a) Fumaric acid and Malic acid

b) Fumaric acid and Succinic acid

c) Malic acid and oxaloacetic acid

d) Citric acid and isocitric acid

30. The energy releasing metabolic reaction in which substrate is oxidised without an external electron Acceptor is called:

a) Photorespiration

b) Aerobic respiration

c) Glycolysis

d) Fermentation

31. The following question consists of two statements each : assertion A and reasons (R) .To answer these questions, mark the correct alternative as directed below:

If both A and R are true and R is the correct explaination of A

If both A and R are true and R is the correct explaination of A

If A is truebut R is false.

If both A and R are false.

Assertion : All the enzymes participating in the Krebs cycle reactions occur in the matrix of Mitochondria.

Reason: Krebs cycle generates GTP in animal well as plant cells.

B. C. D.

32. Most enzymes that take part in KREBS CYCLE are located in:

a) Mitochondrial matrix

b) Cytoplasm

c) Inner mitochondrial membrane

d) Plasma membrane

33. Phos[phorylation of glucose during glycolysis is catalysed by :

a) Phosphoglucomutase

b) Phosphoglucoisomerase

c) Hexokinase

d) Phosphorylase

34. Intermediate stage between aerobic and anaerobic cycles is:

a) Gloxylate cycle

b) Glycolysis

c) Krebs cycle

d) None of these

35. The size of mitochondria inplant cell is:

a) 0.1 – 1.0 µm long

b) 1.0 – 4.0 µm long

c) 2.0 – 4.0 µm long

d) 0 – 4.0 µm long

36. In which of the following reaction related to plant peroxisomes are envolved:

a) Gloxylate cycle

b) Glycolate cycle

c) Krebs cycle

d) Bacterial respiration

37. For undergoing glycolysis ,glusose require priming with the help of ATP:

a) 1

b) 2

c) 3

d) 4

38. Which among the following is the most appropriate reason for storing green coloured apples at low temperature?

a) The rate of photosynthesis is reduced

b) Respiration and photosynthesis are completely inhibited

c) The rate of respiration is reduced

d) The rates of photosynthesis and respiration are reduced.

39. A net gain of glycolysis with a molecule of glucose is the formation of:

a) 2NADH 2, 2ATP and 2 pyruvic acid molecules

b) 2NADH 2, 2ATP and 1 pyruvic acid molecules

c) 1NADH 2, 2ATP and 2 pyruvic acid molecules

d) 2NADH 2, 4 ATP and 2 pyruvic acid molecules

40. The last electron acceptor of ETC during oxidative phosphorylation is:

a) Cyt b

b) Cyt a3

c) H2

d) CO2

41. R.Q. of protein is :

a) 7

b) 1.0

c) 9

d) more than one.

42. Which of the following carbon is anomeric in glucose:

a) C 1

b) C 2

c) C 4

d) C 5

43. Glycolysis term has originated from greek word :

a) Glycose and lysis

b) Glycos and lysis

c) Glyco and lysis

d) Glycose and lysis

44. The cofactor of nitrate reductase is :

a) Cu

b) Zn

c) Ca

d) Mo

45. Which process makes direct use of oxygen ?

a) Glycolysis

b) Fermentation

c) Electron transport

d) Kreb's cycle

46. Dough kept overnight in warm place becomes soft and spongy due to:

a) Osmosis

b) Absorption of CO_2

c) Cohesion

d) fermentation

47. Chemiosmotic theory of ATP synthesis in chloroplasts and mitochondria is based on:

a) Membrane potential

b) Accumulation of Na^+ ions

c) Accumulation of K^+ ions

d) Proton gradient

48. The process by which ATP is produced in the inner membrane of a mitochondrion. The electron transport system transfers from the inner compartment to the outer, as the proton flow back to the inner compartment, the energy of thgeir movement is used to add phosphate to ADP , forming ATP,

a) Chemiosmosis

b) Phosphorylation

c) Glycolysis

d) Fermentation

49. In photophorylation ,under the circumstances when NADP is not longer available as acceptor the electrons are passed to :

a) Cytochrome f

b) Plastocyanin

c) Cytochrome B6

d) Quinone

50 In citric acid cycle, the step which is not mediated by dehydrogense enzyme is :

a) Oxaloacetic acid to citric acid

b) Citric acid to α-keto glutaric acid

c) Succinic acid to fumaric acid

d) malic acid to oxaloacetic acid.

ANSWERS

1. a) Oxygen
2. d) Phosphorylase
3. b) $CO_2 + H_2O$
4. b) intermembranal space
5. b) Growing shoot apex
6. b) It produces ATP as energy store house.
7. d) ATP + H_2O
8. a) A-ii,B-iii,C-iv,D-i
9. c) less than 1
10. c) megaloglobin
11. c) Amphibolic
12. c)-19
13. d)-H_2O
14. b)- Oxidative decarboxylation
15. b) –Seed
16. c) –Thirty
17. c) –Succinic dehydrogenase
18. d) – ATP production in small stepwise units.
19. b)-Two
20. b)- The intermediate compound which link kreb's cycle and glycolysis is Malic acid.
21. b) – Oxalosuccinic acid α-Ketogluteric acid
22. c) -Aldolase

23. b) -Ethanol+ CO_2 + ATP
24. d)- $CH_3COCOOH$
25. c) Volume of CO_2 evolved / Volume of O_2 consumed
26. d) Lactate fermentation
27. a) ATP
28. c) DNA + RNA ribosome
29. b) Fumaric acid and Succinic acid
30. d) Fermentation
31. D
32. a) Mitochondrial matrix
33. c) Hexokinase
34. b) Glycolysis
35. b) 1.0 – 4.0 µm long
36. a) Gloxylate cycle
37. b) 2
38. c) The rate of respiration is reduced.
39. a) 2NADH 2 , 2ATP and 2 pyruvic acid molecules
40. b) Cyt a3
41. c) 0.9
42. a) C 1
43. b) Glycos and lysis
44. d) Mo
45. c) Electron transport
46. d) Fermentation

47. d) Proton gradient
48. a) Chemiosmosis
49. c) Cytochrome B6
50. a) Oxaloacetic acid to citric acid

Plant Growth and Development

1. Who classified the plants into different categories on the basis of photoperiodic responses
   (A) benthem and Hooker
   (B) cajlachjan
   (C) Garner and Allard
   (D) Linneus
2. The plant which needs light period shorter than critical period is called
   (A) Short day plant(SDP)
   (B) Long day plant(LDP)
   (C) Day neutral plant(DNP)
   (D) Short long day plant(SLDP)
3. Vernalization is also called as
   (A) Spiringification
   (B) Yarovization
   (C) Chilling effect
   (D) All of these
4. The harmone which stimulates the flowering in vernalized plant is
   (A) Florigen
   (B) Vernalin
   (C) Cytokinin
   (D) Gibberellin
5. Vernalization is
   (A) Growth curve related to light
   (B) Effect of photoperiods on plant growth
   (C) Speeding up ability to flower by low temperature
   (D) Diurnal photoperiodicty
6. Epigeal germination is found in
   (A) Gram
   (B) Pea
   (C) Castor
   (D) Jowar
7. Which of the following substance acts as natural germination inhibitor?
   (A) Cytokinin
   (B) Gibberellin
   (C) Ethylene
   (D) Caumarin
8. The part of seed which emerges out first during germination is
   (A) Radicle
   (B) Plumule
   (C) Root
   (D) Shoot
9. Indefinite growth of plants is due to presence of
   (A) Meristemtic cells
   (B) Parenchyma
   (C) Permanent tissue
   (D) Vascular tissue

10. In which of the following, rate of growth gradually slows down and comes to steady stage?
    (A) Lag phase
    (B) Log phase
    (C) Exponential phase
    (D) Stationary phase
11. Identify the true statement/statements regarding growth and development in organisms.
    (A) Growth is intrinsic.
    (B) Growth is the physical development while development is the physiological growth.
    (C) Growth is accompanied by development.
    (D) All of these.
12. Vernalization treatment can convert
    (A) a biennial into an annual.
    (B) a spring variety into a winter variety.
    (C) an annual into a perennial.
    (D) all of these .
13. Scarification is a method of overcoming dormancy in seeds which
    (A) contain immature embryo.
    (B) Hard seed coat.
    (C) possess germination inhibiting substance.
    (D) contain fully formed but physiologically unripe embryo.
14. Identify the precursor substance used in the biosynthesis of gibberellins in plants.
    (A) Gibberellic acid
    (B) Methionine
    (C) Acetyl Co-A
    (D) Tryptophan
15. Seeds in which germination is stimulated by light are called
    (A) Photoblastic seeds
    (B) Thermoblastic seed
    (C) Positively photoblastic
    (D) Negatively photoblastic
16. The chemical substances like phenolics, caumarins, ferulic acid are
    (A) Growth harmones
    (B) Growth inhibitors
    (C) Germination inhibitors
    (D) Germination promoters
17. The seeds which can not germinate in absence of light is called
    (A) Positively photoblastic seed
    (B) Negatively photpblastic seed
    (C) Photoblastic seed
    (D) Photpperiodic seeds
18. Germination inhibitors leached out by one plant may inhibit germination of seeds of other plants is called as
    (A) Allopathy
    (B) Allelopathy
    (C) Dormancy
    (D) Aromapathy

19. The dormancy of seed is due to mechanical resistance of seed coat in
    (A) Allisma
    (B) Capsella
    (C) Amaranthus
    (D) All the above
20. Which of the following growth harmones in plant is influenced by light?
    (A) Gibberellin
    (B) Cytokinin
    (C) Auxin
    (D) Ethylene
21. A seed which is just waiting for favourable environmental condition to germinate is called
    (A)Dormant seed
    (B)Quiescent seed
    (C) Non-viable seed
    (D) Dead seed
22. Richmond – Lang effect is
    (A) Morphogenesis
    (B) Delay of senescence under control of cytokinin
    (C) Induction of early flowering

(D) Protection of organs

23. 2,4-D is used as

(A) Florigen
(B) Vernalin
(C) Herbicide
(D) Fungicide

24. The type of germination in which cotyledons come above the ground is called as

(A) Epigeal
(B) Hypogeal
(C) Viviparpus
(D) Oviparous

25. In most of monocot plants, germination is
    (A) Epigeal
    (B) Hypogeal
    (C) Viviparous
    (D) Hydrogeal

26.The phase of growth which is the first phase and represents lag phase of growth curve is
(A) Formative phase

(B) Cell enlargement phase
(C) Maturation phase
(D) Stationery phase

27. The lateral meristem in plant is reponsible for

(A) Primary growth
(B) Secondary growth
(C) Exponential growth
(D) Growht in elongation

28. Plant growth can be measured by
    (A) Horizontal microscope
    (B) Crescograph
    (C) Auxanometer
    (D) All the above
29. 29.Auxins were first isolated form the plants by
    (A) Darwin
    (B) F.W.Wend
    (C) Boysen-Jensen
    (D) Sachs
30. Apical dominance is due to

(A)Abcisic acid
(B) Gibberelic acid
(C) Auxin
(D) Cytokinin

31. The term auxin was coined by

(A) Skoog

(B) Haberlandt

(C) Miescher

(D) F.W. Went

32. Precursor of Indole acetic acid (natural auxin) is

(A) Glycine

(B) Methionine

(C) Isopentynyl pyrophosphate

(D) Tryptophan

33. All the following hormones are growth inhibitors except

(A) Absiccic acid

(B) dormin

(C) ethylene

(D) IAA

34. Which of the following is a gaseous hormone

(A) IBA

(B) NAA

(C) Abscicic acid

(D) Ethylene

35. Which of the following bioassays are used to detect the presence of auxin

(A) Avena curvature test and tobacco pith culture

(B) Split pea stem curvature test and tobacco pith culture

© Avena curvature test and Split pea stem curvature test

(D) tobacco pith culture only

ANSWERS

1.(C)

2.(A)

3.(D)

4.(B)

5.(C)

6.(C)

7.(D)

8.(A)

9.(A)

10.(D)

11.(D)

12.(D)

13.(B)

14.(C)

15.(c)

16.(B)

17.(A)

18.(B)

19.(D)
20.(C)

21.(B)

22.(B)

23.(C)

24.(A)

25.(B)

26.(A)

27.(B)

28.(D)

29.(B)

30.(C)

31.(D)

32.(D)

33.(D)

34.(D)

35.(C)

Digestion and Absorption

Q1.What is the dental formula of human being?

a)2123/2123

b)2123/2213

c)2114/2114

d)2122/2122

Q2.Which one serves as a passage for both food and air?

a)Larynx

b)Pharynx

c)Gullet

d)Glottis

Q3.Bile juice is stored in which organ of human body?

a)Gall bladder

b)Liver

c)Kidney

d)Pancreas

Q4.Which one of the following sequence is in correct order?

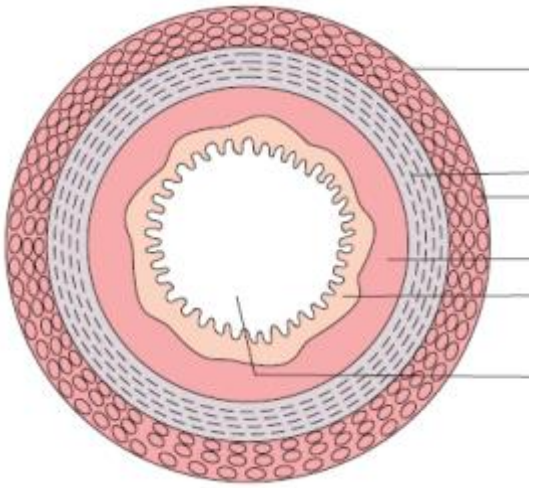
a)Descending portal colon→Rectum→Anus

b)Colon→Anus→Rectum

c)Stomach→Jejunum→Duodenum

d)Ileum→Colon→Caecum

Q5.Given below the diagram of the transverse section of alimentary canal.Label it correctly and Choose the correct option accordingly.



A

B

C

D E

a)A-Muscularis B-Serosa C-Submucosa D-Mucosa

b)A- Muscularis B-Serosa C-Mucosa D-Submucosa

c)A-Serosa B-Muscularis C-Mucosa D-Submucosa

d) A- Serosa B- Muscularis C-Submucosa D-Mucosa

Q6.How many salivary glands are present in human being?

a)6

b)10

c)8

d)12

Q7.Which one of the following is regarded as source of instant energy?

a)Fats

b)Carbohydrates and Fats

c)Carbohydrates only

d)Minerals and Vitamins

Q8.The innermost layer of human gut forms irregular folds in the stomach which are known as

a)lumen

b)villi

c)rugae

d)Both b) and c)

Q9.Common bile duct is formed by the fusion of

a)pancreatic duct and cystic duct

b)pancreatic duct and hepatic duct

c)pancreaticduct,hepatic duct and cystic duct

d)hepatic duct and cystic duct

Q10Which one is not associated with the secretion of saliva in human beings?

a)Parotids glands

b)Sublingual glands

c)Zymogenic cells

d)Submaxillary glands

Q11.Which enzyme is present in human saliva?

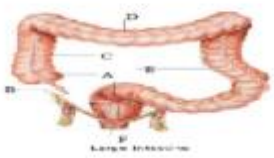
a)Ptylin

b)Pepsin

c)Enterokinase

d)Maltase

Q12. The diagram of large intestine of man is given below.Identify the parts labelled A, B, C, D, E and F



a)A=caecum,B=Vermiform appendix,C=Ascending colon,D=Transverse colon,E=Descending colon,

b) F=caecum,B=Vermiform appendix,E=Ascending colon,D=Transverse colon,C=Descending colon,

c) F=caecum,B=Vermiform appendix,C=Ascending colon,D=Transverse colon,E=Descending colon,

d) A=caecum,B=Vermiform appendix,D=Ascending colon,E=Transverse colon,F=Descending colon,

Q13.A large lymph vessel present in the villus of small intestine is called

a)crypts

b)lacteal

c)Peyer's patches

d)valve of kerkring

Q14.Which of the following match is correct?

a)Renin-Protein

b)Trypsin-starch

c)Invertase-Sucrase

d)Amylase-Lactose

Q15.Match the following columns

Column -I	Column-II
a-Salivary amylase	1. Proteins
b -Bile salts	2. Milk protein
c-Renin	3. starch
d-Pepsin	4. Lipids

e-Steapsin	5. Emulsification of fats

a) 5 4 1 2 3

b) 3 5 2 1 4

c) 2 3 5 4 1

d) 2 3 4 5 1

Q16.Which one of the following sugar is most rapidly absorbed in the human gut.?

a)Glucose

b)Fructose

c)Galactose

d)Sucrose

Q17.Select the true statement regarding the digestion and absorption of food in humans.

a)Oxyntic cell in human stomach secretes proenzymes,pepsinogen and trypsinogen

b)Chylomicrons are small lipoprotein vesicles which are transported from the intestine into blood capillaries.

c)About 70% of the starch is hydrolysed by salivary amylase.

d)Fructose and aminoacids are absorbed through the intestinal mucosa with the help of carrier ions like Na+

Q18.Absorption of fat occours through the process of

a)active transport

b)passive transport

c)osmosis

d)simple diffusion

Q19.What is common among amylase,renin and trypsin?

a)all are produced in stomach

b)all act at a pH lower than 7

c)all are proteins

d)all are proteolytic enzymes

Q20.What name would you suggest for a thoroughly mixed food with gastric juices by the churning movements of muscular stomach wall?

a)Bolus

b)Chyme

c)Either bolus or chime

d)none of these

Q21.Which is the inactive form of enzyme,pepsin?

a)Pepsinogen

b)Protease

c)Trypsin

d)Peptones

Q22.Pepsinogen is converted into active form of enzyme pepsin with the help of which of the following compound?

a)Proenzyme

b)Hydrochloric acid

c)Electrolyte

d)Bicarbonates

Q23.Which enzyme is responsible for the digestion of milk in infants?

a)Pepsin

b)Trypsin

c)Renin

d)various proteolytic enzyme

Q24.Maximum absorption of water occours in

a)caecum

b)colon

c)small intestine

d)large intestine

Q25.Succus entericus is secreted by

a)Goblet cells

b)Crypts of Lieberkuhn

c)Islets of lengerhans

d)Paneth cell

Q26.What is the composition of bile?

a)bile pigment and bile salts

b)bile pigments and cholesterol

c)cholesterol and phospholipids

d)All the above

Q27.Which of the following present in the filiform papillae of the tongue?

a)chemoreceptors

b)thermoreceptors

c)tactile receptors

d)taste buds

Q28.The gastric juice contain

a)trypsin,renin,pepsin

b)pepsin,trypsin,amylase

c)pepsin ,renin,

d)trypsin,pepsin,lipase

Q29.Fill in the blanks with appropriate options to complete the given equation

Fats—— A—àB—pancreatic lipase_—>Monoglycerides +Fatty acids

a)A-Lysozyme, B-Polyglycerides

b)A-Lysozyme, B-Diglycerides

c)A-Lipase , B)Diglycerides

d)A-Lipase B)Polyglycerides

Q30.Bile salt activates which enzyme?

a)Lipase

b)pancreatic amylase

c)Pepsinogen

d)Trypsinogen

Q31.Choose the incorrect statement regarding human digestive system with reference to a normal person.

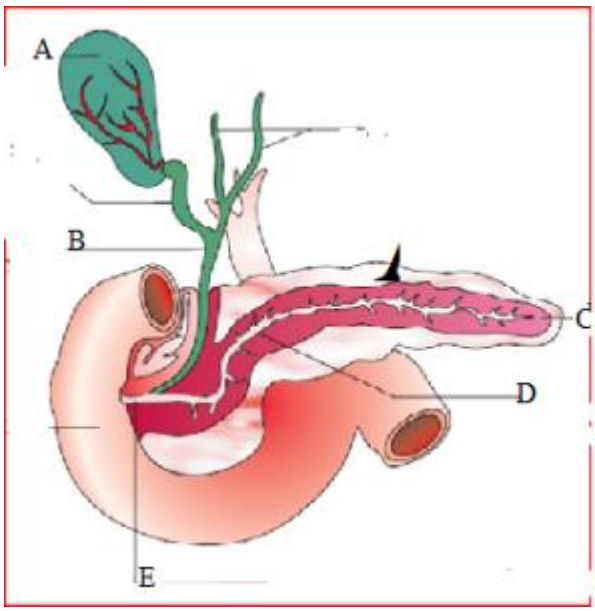
a)human saliva is slightly acidic

b)In human being, four pair of salivary gland secretes saliva

c)The quantity of saliva in adult man may be 1 to 1.5L day

d)Enzyme amylase present in saliva is responsible for the break down of starch into simpler sugar

Q32.The given below diagram represents a duct system of pancreas,liver and gall bladder.Label the diagram from A to E.



a)A-Gall bladder, B-common bile duct, C-Hepato pancreatic duct D-Pancreas E-Pancreatic duct

b) A-Gall bladder, B- bile duct, C-Hepato pancreatic duct D-Pancreatic duct E-Pancreas

c) A-Gall bladder, B- bile duct, E-Hepato pancreatic duct C-Pancreatic duct D-Pancreas

d) A-Gall bladder, B-common bile duct, E-Hepato pancreatic duct D-Pancreatic duct C-Pancreas

Q33.Which form of fats is absorbed into the intestinal cells?

a)micelles

b)chylomicrons

c)fatty acids

d)both a) and b)

Q34.Function of caecum is to carryout digestion of

a)starch

b)proteins

c)cellulose

d)fats

Q35.Part of the stomach which opens into the duodenum?

a)cardiac

b)pyloric

c)fundus

d)body

Q36.Which is the hardest material of the human body?

a)Dentine

b)Enamel

c)Teeth

d)Bone

Q37.Which one of the following pairs of food components in humans reaches the stomach totally undigested

a)starch and cellulose

b)protein and starch

c)starch and fat

d)fat and cellulose

Q38.A young infant may be feeding entirely on mother's milk which is white in colour but he possesses yellowish coloured stools.What is this yellow colour due to?

a)Pancreatic juice poured into duodenum

b)Intestinal juice

c)Bile pigments passed through bile juice

d)Undigested milk protein casein.

Q39.The absorption of water,alcohol and monosaccharidesoccour in

a)gastric mucosa

b)mucosa of ileum

c)intestinal mucosa

d)none of the above

Q40.Select what is not true of intestinal villi among followings:

a)They possesses microvilli

b)They increase the surface area

c)They are supplied with capillaries and the lacteal vessels

d)They only participate in digestion of fats

Q41.Hepatopancreatic duct opens into the duodenum and carries

a)Bile

b)Pancreatic juice

c)both bie and pancreatic juice

d)saliva

Q42.One of the following is not a common disorder associated with digestive system:

a)Tetanus

b)Diarrhoea

c)Jaundice

d)Dysentery

Q43.Which one of the following is a non reducing carbohydrate?

a)Maltose

b)Sucrose

c)Lactose

d)Ribose 5 –phosphate

Q44.Where do certain symbiotic microorganisms normally occour in human body?

a)Caecum

b)oral lining and toungue surface

c)Vermiform appendix and rectum

d)Duodenum

Q45.What is the another name of gastro oesophageal sphincter?

a)pyloric sphincter

b)gastro duodenal sphincter

c)cardiac sphincter

d)sphincter of oddi

Q46.In humans,which opening is guarded by sphincter of Oddi?

a)Opening of hepatopancreatic ampulla into duodenum

b)Opening of stomach into duodenum

c)Opening of oesophagus into stomach

d)Opening of bile duct into gall bladder

Q47.The epithelium of the mucosa remain unaffected from HCl due to

a)Mucous continues to lubricate the inner lining

b)bicarbonates present in the gastric juices protect the linings

c)both a) and b)

d)none of the above

Q48.Which of the following cells produce HCl ?

a)B-cell

b)α-cell

c)Oxyntic cell

d)Chief cell

Q49.What is frenulum?

a)It is the fold by which tongue is attached to the floor of oral cavity

b)it is an adenoid which is present on pharyngeal wall

c)it is a tonsil like structure

d)it is a V-shaped furrow which divides the surface of tongue.

Q50.Thecodont,diphyodont and heterodont teeth are characterstic of

a)Aves

b)Reptiles

c)Mammals

d)Amphibians

ANSWER KEY

1-a,2-b,3-a,4-a,5-d,6-a,7-c,8-c,9-d,10-c,11-a,12-a,13-b,14-c,15-b,16-c,17-b,18-d,19-c,20-b,21-a, 22-b,23-c,24-b,25-b,26-d,27-c,28-c,29-c,30-a,31-b,32-d,33-a,34-c,35-b,36-b,37-d,38-c,39-a,40-d,41-c 42-a,43-b,44-a,45-c,46-a,47-c,48-c,49-a,50-c

Breathing and exchange of gases

1)Respiration is helpful in

(a) Removing waste from the body

(b) Producing energy within the body

(c) Production of proteins

(d) Production of carbohydrates

Ans :-producing energy within the body

2)The surface, from which the exchange of gas takes place is called

(a) Plasma surface

(b) Respiratory substrates

(c) Respiration surface

(d) Gaseous surface

Ans :-respiration surface

3)Which of the following shows pulmonary respiration

(a) Sponge

(b) Fishes

(c) Coelenterate

(d)human

Ans:-human

4) What is the upper region of pharynx called?

(a) Oropharynx

(b) Nasopharynx

(c) Laryngopharynx

(d) None of these

Ans:-Nasopharynx

5)the trachea is supported by,cartilaginous rings,which are.....shaped

(a)C

(b)L

(c)O

(d)S

Ans:-C

6) A lung contains many small balloon like air sacs called

(a)gas spaces

(b)alveoli

(c)bronchi

(d)bronchioles

Ans:-Alveoli

7) Intercoastal muscles regulate the movement of

(a)ribs

(b)trachea

(c)diaphragm

(d)pharynx

Ans:-ribs

8) Respiratory control centres are located in

(a)lungs

(b)medulla oblongata

(c)spinal cord

(d)ribs

Ans:-medulla oblongata

9) The deoxygenated blood from heart comes to the lungs by

(a)pulmonary artery

(b)pulmonary vein

(c)bronchial artery

(d)renal vein

Ans:-pulmonary artery

10) The metal ion present in haemoglobin is

(a)iron

(b)magnesium

(c)copper

(d)zinc

Ans:-iron

11)how much fraction of oxygen is transported to tissues through RBCs?

(a)100%

(b)56%

(c)45%

(d)97%

Ans:-97%

12)H_2CO_3 is converted into CO_2 and H_2O with the help of an enzyme known as

(a)carboxylase

(b)carbonic dehydrogenase

(c)carbonicenhydrase

(d)carbonic anhydrase

Ans:-carbonic anhydrase

13)the largest amount of CO_2 is transported in blood as

(a)carbamino compounds

(b)bicarbonates

(c)carbonic acid

(d)carbonate ions

Ans:-bicarbonates

14)chloride back-shiftis associated with the transport of

(a)carbamino

(b)CO_2

(c)oxygen

(d)water

Ans:-oxygen

15)bronchitis is a

(a)bacterial infection

(b)viral infection

(c)protozoan infection

(d)fungal infection

Ans:-bacterial infection

16)flattening of alveola ducts(tracheal vessels)results in

(a)asthma

(b)emphysema

(c)lung cancer

(d)bronchitis

Ans:-emphysema

17)which of these protects the larynx

(a)pharnx

(b)trachea

(c)epiglottis

(d)naso-pharynx

Ans:-epiglottis

18)which is not a viral infection

(a)vocational lung disease

(b)bronchitis

(c)asthma

(d)emphysema

Ans:-vocational lung disease

19)in which case specific gases ,chemicals or suspended particulate matter in air are not responsible for this disease

(a)silicosis

(b)asbestosis

(c)fibrosis

(d)pneumonia

Ans:-pneumonia

20)in human beings

(a)left lung is slightly smaller

(b)left lung is slightly wider

(c)right lung is slightly smaller

(d)both lungs are of similar size

Ans:-left lung is slightly smaller

21)the left lung is slightly smaller so as

(a)it is exception

(b)no specific reason

(c)both A and B

(d)to accommodate heart

Ans:-to accommodate heart

22)this disease is due to allergens

(a)emphysema

(b)bronchitis

(c)pneumonia

(d)asthma

Ans:-asthma

23)the centre which excites both the activities during rapid breathing is

(a)ventral respiratory center

(b)lateral respiratory center

(c)pneumotoxic center

(d)dorsal respiratory center

Ans:-ventral respiratory center

24)the function of pneumotoxic center is

(a)to regulate inhalation

(b)to maintain rhythmicity of respiration

(c)increases rate of exhalation

(d)does not play significant role

Ans:-to regulate inhalation

25)the enzyme carbonic anhydrase is of which type?

(a)lyases

(b)reversible

(c)unidirectional

(d)isomerase

Ans:-Reversible

26)what is the role of buffer system in blood?

(a)to maintain pH of blood plasma

(b)to maintain pH of blood

(c)to maintain pH of RBC

(d)to maintain pH of blood platelets

Ans:-to maintain pH of blood

27)maximum amount of O2 is transported in humans by

(a)RBC

(b)WBC

(C)blood platelets

(d)blood plasma

Ans:-RBC

28)oxygen carrying capacity of blood is

(a)20%

(b)30%

(c)40%

(d)50%

Ans:-20%

29)respiratory movements are controlled by

(a)cerebellum

(b)cerebrum

(c)medulla oblongata

(d)cruracerebri

Ans:-medulla oblongata

30)vital capacity of lung is equal to

(a)IRV+ERV+TV

(b)IRV+ERV+TV-RV

(c)IRV+ERV+TV+RV

(d)IRV+ERV

Ans:-IRV+ERV+TV

31)vocal cords occur in

(a)pharynx

(b)larynx

(c)glottis

(d)bronchial tube

Ans:-larynx

32)the cells which do not respire are

(a)epidermal cells

(b)sieve cells

(c)cortical cells

(d)erythrocytes

Ans:-erythrocytes

33)Which lungs are situated in the human body

(a)abdominal cavity

(b)thoracic cavity

(c)coelomic cavity

(d)pleural cavity

Ans:-thoracic cavity

34)which is the last step involved in respiration

(a)diffusion of gases

(b)breathing

(c)utilization of O2,by body cellsand resultant release of CO2

(d)transport of gases

Ans:-utilisation of 02, by body cells and resultant release of CO2

35)the breathing rate of normal healthy man is

(a)8-18 times/min

(b)6-12 times/min

(c)16-24 times/min

(d)12-16 times/min

Ans:-12-16 times/min

36)what is the value of tidal volume in a normal healthy man?

(a)approximately 6000-8000 ml/min

(b)1000-1100 ml/min

(c)2500-3000 ml/min

(d)approximately 8000-12000 ml/min

Ans:-approximately 6000-8000 ml/min

37)what is the value of pCO2 in atmospheric air, alveoli and tissues respectively?

(a)0.3 mm Hg,40 mm Hg, 95 mm Hg

(b)95 mm Hg,40 mm Hg,159 mm Hg

(c)45 mm Hg,0.3 mm Hg,40 mm Hg

(d)0.3 mm Hg,40 mm Hg,45 mm Hg

Ans:-0.3 mm Hg,40 mm Hg,45 mm Hg

38)which part of Hb,O2 molecules bind?

(a)haem

(b)globin

(c) both A and B

(d) amino group of globin

Ans:-Haem

39)how much CO2 is delivered to the alveoli by every 100 ml of deoxygenated blood?

(a)6 ml

(b)4 ml

(c)5 ml

(d)3 ml

Ans:-4 ml

40)a pair of external nostrils present in human opens out

(a)below the upper lips

(b)above the upper lips

(c)between upper and lower lips

(d)above the rhythm

Ans:-above the upper lips

41)which instrument helps in clinical assessment of pulmonary functions?

(a)sphygmomanometer

(b)stethoscope

(c)spirometer

(d)electrocardiograph

Ans:-spirometer

42)diaphragm is dome shaped muscular structure which separates

(a)coelomic cavity from pelvic cavity

(b)pleural cavity from thoracic cavity

(c)thoracic cavity from abdominal cavity

(d)pelvic cavity from abdominal cavity

Ans:-thoracic cavity from abdominal cavity

43)what happens when pressure within the pulmonary cavity is higher then the atmosphere pressure?

(a)inhalation of air

(b)expulsion of air

(c)no inhalation and expulsion of air occurs

(d)lungs inhale and rupture

Ans:-expulsion of air

44)in mature mammalian erythrocytes the respiration is

(a)aerobic

(b)anaerobic

(c)sometimes aerobic and sometimes anaerobic

(d)absent

Ans:-anaerobic

45)skin of man cannot act as respiratory organ because

(a)it is dry

(b)it is not thin

(c)it is not permeable to O2 and CO2

(d)all of these

Ans:-all of these

46)which of the following is not a character of respiratory surface?

(a)thin,permeable to gases

(b)extensive

(c) least vascular

(d)moist

Ans:-least vascular

47)ring like cartilage of larynx is known as

(a)thyroid cartilage

(b)arytenoid cartilage

(c)cricoid cartilage

(d)cartilage of santonni

Ans:-cricoid cartilage

48)lungs are enclosed in

(a)peritoneum

(b)perichondrium

(c)pericardium

(d)pleural membranes

Ans:-pleural membranes

49)which of the following reflex is involved to prevent excessive inflation of lungs?

(a)stretch reflex

(b)hering-breuer's reflex

(c)withdrawal reflex

(d)conditioned reflex

Ans:-hering-breuer's reflex

50)the ventilation movements of lungs in mammals are governed by

(a)muscular walls of lung

(b)diaphragm

(c) costal muscles

(d)both B and C

Ans:-both B and C

Body Fluids and Circulation

1.Select the wrong pair.

a)Fibrinogen : blood clotting

b) Globulin : defense

c) Albumin : osmotic balance

d)Haemoglobin : oxygen storing

2.Which of the following has closed circulation?

a)Snail

b)Cockroach

c)Sepia

d)Earthworm

3.Which of the following statement is correct?

a)Neutrophil has bilobed nucleus with granules in the cytoplasm.

b)Neutrophil has kidney shaped nucleus with granules in the cytoplasm

c)Neutrophil has multilobed nucleus without granules in the cytoplasm

d)Neutrophil has multilobed nucleus with granules in the cytoplasm

4.Graveyard of RBCs is ?

a)Bone marrow

b)Lymph node

c)Spleen

d)liver

5.Which of the following enzyme is required for the conversion of fibrinogen to fibrin?

a)Fibrinase

b)Thrombinase

c)Thrombin

d)Thrombokinase

6.Severe anaemia and jaundice in erythroblasosis foetalis patient is due to –

a)Destruction of foetal RBC

b)Iron deficiency in foetus

c)liver damage

d)Rh factor in foetus

7.20-25% of WBCs are ———- .

a)Neutrophil,

b)Monocyte

c)Eosinophil

d)Lymphocyte

8.Select thr correct constituents of human blood plasma

a) Na+ ,Mg++ ,Cl- , Fe++ ,Ca++

b) Na^+ ,Mg^{++}, Cl^- ,Ca^{++} ,HCO_3^-

c)Na^+ ,Cl^- , F^- , Ca^{++} , Mg^{++}

d)Na^+ , Cl^- , Mg^{++} ,Ca^{++} , Zn^{++}

9.Karl Landsteiner is associated with ———- .

a)Rh blood grouping

b)ABO blood grouping

c) double circulation,

d)ECG.

10.Which of the following is an anticoagulant?

a)Thromboplastin

b) Globulin

c)Fibrinogen

d)Heparin

11.Which of the following metal ion is required in blood coagulation?

a) Na^+

b)K^+

c) Mg^{++}

d) Ca^{++}

12.The haemolytic disease of the new born occurs only when :

a)Husband is Rh+ and wife is Rh-

b)Mother is Rh+ and husband is Rh-

c)Mother is Rh- and foetus is Rh-

d)husband is Rh- and wife is Rh-

13.Which of the following are agranulocytes ?

a)Monocytes and basophils

b)Lymphocytes and neutrophil

c)Lymphocytes and eosinophil

d)Monocytes and lymphocytes

14.The life span of mammalian RBC is :

a)Two months

b)three months

c)four months

d) 10 to 13 days

15. Polycythemia refers to abnormally large number of :

a)RBC

b)WBC

c)Thrombocytes

d)lymphocytes

16.Transport of respiratory gases in insects takes place through:

a)blood

b)lymph

c)Alveoli,

d)Tracheal system

17.Digested fats are absorbed in:

a)lacteal

b)capillaries

c)artery

d)vein

18.The cardiac impulse originates from:

a)AV node

b) SA node

c)Brain

d)AV bundle

19.The correct sequence of conduction of cardiac impulse is:

a)SA node → AV node → Purkinje fibre → A V bundle

b)SA node → AV bundle → Purkinje fibre → AV node

c)SA node → Purkinje fibre → AV node → AV bundle

d)SA node → AV node → AV bundle → Purkinje fibre

20.There is no mixing of oxygenated and deoxygenated blood in the heart of:

a)Crow and Whale,

b)Rat and Bat,

c)Penguin and Horse,

d)All of them

21. Hypophysial portal vein transport blood from:

a) Pituitary gland to hypothalamus ,

b) Hypothalamus to medulla

c)Hypothalamus to medulla ,

d)Hypothalamus to pituitary gland.

22.The pathway of oxygen transport from lungs to leg muscle is :

a)Pulmonary vein → R. auricle → R.ventricle → Aorta

b)Pulmonary vein → L.auricle → L.ventricle → Aorta

c) pulmonary artery → auricle → L.ventricle → Aorta

d)Pulmonary artery → R.auricle → R.ventricle → Aorta

23.Which of these has oxygenated blood?

a)Renal vein

b)Hepatic portal vein

c)Pulmonary artery

d)Pulmonary vein

24. Artificial pacemaker is implanted in an individual due to defect in

a)AV node

b) SA node

c) SV node

d) Purking fibres

25. Lub sound is produced during heart beat is caused by:

a)Atrial systole

b)atrial diastole

c) Ventricular systole

d)Ventricular diastole

26. Which of the following blood cell is involved in antibody production?

a)RBC

b)neutrophil

c)T- lymphocyte

d)B-lymphocyte

27. Two chambered heart is a feature of:

a)Sardine and Rohu

b)Rohu and Frog

c)Salamander and Catla

d)Sardine and Lizard

28.The duration of cardiac cycle is:

a)0.8sec

b)0.08sec

c)72sec

d)8sec

29.Heart of Cockroach is:

a)3 chambered

b)13chambered

c)9chambered

d)12chambered

30.Which of the following is essential for coagulation of blood?

a)Calcium ions and heparin

b)Oxalates and citrates

c)Platelet factors and heparin

d)platelet factors and calcium ions

31. Nucleus is absent in:

a)Eosinophils

b)monocytes

c)erythrocytes

d)neutrophils

32. In the ECG of a normal healthy individual, one of the following waves is not represented:

a)Depolarisation of atria

b)Repolarisation of atria

c)Depolarisation of ventricle

d)Repolarisation of ventricle

33. The deposition of lipids on the wall lining the lumen of large and medium sized arteries is referred as:

a)thrombosis

b)Osteoporosis

c)Angina pectoris

d)Artherosclerosis

34. Which is the correct sequence of types of WBCs in decreasing order in terms of number per mm3 of human blood?

a)Eosinophil>basophil>neutrophil

b)Basophil>eosinophil>neutrophil

c)eosinophil>neutrophil>basophil

d)Neutrophil>eosinophil>basophil

35.Rh- person donated blood to Rh+ person for the second time. Then:

a)Rh+ person will die

b)Rh- person will die

c)Rh+ blood starts reacting to Rh- blood

d)Nothing happens to Rh+ person

36. Largest amount of urea is carried in Human by:

a)Renal vein

b)renal artery

c)hepatic vein

d)hepatic portal vein

37. Maximum surface area of our circulatory system is present in:

a)Capillaries

b)arteries

c)veins

d)heart

38. Open circulatory system is present in:

a)Periplaneta and Apis

b)Periplaneta and Pheretima

c)Pheretima and Hirudinaria,

d)Octopus and Neries

39. Highest amount of CO_2 is carried through:

a)Pulmonary vein

b)coronary artery

c)Aorta

d)Pulmonary artery

40. Select the correct statement:

a)T-wave in ECG marks the end of systole

b)T-wave represents the electrical excitation of atria

c)P-wave represents depolarization of ventricle

d)QRS complex represents repolarisation of ventricle

41. Cardiac output is increased by:

a)Parasympathetic neural signal and adrenaline

b)Sympathetic neural signal and adrenaline

c)Sympathetic neural signal and adrenal cortical hormone

d)Sympathetic and parasympathetic neural signal

42. Cardiac function is moderated by a special neural centre present in:

a)Cerebellum

b)cerebrum

c)Pons

d)medulla oblongata

43. Which of the following is not a part of systemic circulation?

a)Pulmonary artery

b)Aorta

c)renal artery

d)superior vena cava

44. Select the wrong statement:

a)Hepatic portalsystem carries blood from liver to intestine

b)Hepatic portalsystemcarries blood from intestine to liver

c)Coronary circulation supply blood to cardiac muscle

d)Renal vein carries blood from kidney to inferior vena cava

45. SAN is located in:

a)Left atrial wall

b)Atrio ventricular septum

c)Right atrial wall

d)Inter atrial septum

46. Incomplete double circulation is present in:

a)Fish and amphibian

b)Amphibia and reptilia

c)reptilian and birds

d)reptilian and fish

47. Formed elements in the blood are trapped at the site of injury by:

a)Fibrinogen

b)Thrombin fibre

c)Prothrombin

d)fibrin

48. The back flow of blood from left ventricle to right auricle is prevented by:

a)Tricuspid valve

b)bicuspid valve

c)Semilunar valve

d) AV valve

49. Which of the following is involved in CO_2 transport from brain tissue to lungs?

a)Superior vena cava, right ventricle, pulmonary artery

b)Pulmonary artery, right auricle, inferior vena cava

c)superior vena cava, inferior vena cava, left ventricle

d)Superior vena cava, right auricle, pulmonary vein

50. The cardiac output of a healthy individual is:

a)500ml

b)6litrs

c) 5000ml

d)50ml

ANSWER KEY

1)d 2)d 3)d 4)c
5)c 6)a 7)d 8)b 9)b 10)d 11)d 12)a 13)d 14)c 15)a 16)d 17)a 18)b 19)d 20)d 21)d 22)b 23)d 24)b 25)c 26)d 27)a 28)a 29)b 30)d 31)c 32)b 33)d 34)d 35)d 36)c 37)a 38)a 39)d 40)a 41)b 42)d 43)a 44)a 45)c 46)b 47)d 48)b 49)a 50)c

Excretory Products and their elimination

1. Main function of uriniferous tubules

a) Concentration of urine

b) Passage of urine

c) Reabsorption of useful substances from glomerular filtrate

d) Removal of urea and other waste from blood

2. The mechnism of urine foundation nephrone involves

a) Utrafication

b) Secretion

c) Reabsorption

d) All of above

3. Which hormone induced the process of reabsorption from glomerouous?

a)Oxytosin

b) Vasopression

c) Relkgin

d) Calsitonin

4. Glucose is reabsorbed from glomerular filterate though

a) Active transport

b) Passive transport

c) Osmosis

d) Difusion

5. Excretory product of birds and raptiles is

a)Urea

b) Uric acid

c) Ammonia

d) Creatinin

6. Part not belonging to urinferous tubule is

a) Glomerules

b) Henle’s loop

c) Distalconvoluted tuble

d) Connecting tubule

7. The two kidneys lie:

a) At the level of ovaries

b) At the same level

c) Left kidneyat a higher level than the right one

d) Right kidneyat a higher level than the left one

8. Which blood vessel takes blood awayfrom kidney?

a) Renalportal vein

b) Renalvein

c) Afferent arteiote

d) Efferent artribute

9. Which hormone influence the activity of kidney?

a) Vasopression

b) Thyoxine

c) Vasopression & aldosterone

d) Gonadotrophin

10. If liver frombody is removed then which component of blood increases

a) Ammonia

b) Protein

c) urea

d) Uric acid

ANSWER KEY

1	a
2	b
3	b

4	d
5	a
6	d
7	b
8	a
9	b
10	a

Locomotion and Movements

1. ATPase of the muscle is located on

A. Actin

B. Myosin

C. Troponin

D. Sarcoplasm

2. Knee & Elbow joints are example of

A. Saddle joint

B. Ball and socket joint

C. Pivot joint

D. Hinge joint

3. Synovial joints are

A. Pivot

B. Hinge

C. Ball & socket

D. All of these

4. Number of true ribs is

A. 7

B. 3

C. 9

D. 2

5. Which of the following is true statement?

A. Humerus articulates with Acetabulum of Pelvic girdle

B. Humerus articulates with Glenoid cavity of Pelvic girdle

C. Humerus articulates with Glenoid cavity of Pectoral girdle

D. Humerus articulates with Acetabulum of Pectoral girdle

6. Find out the correct match.

A. Muscular dystrophy is age related shortening of muscle

B. Osteoporosis is due to reduction in bone mass

C. Gout – auto immune disorder which inhibits sliding of myosin filament

D. Myasthenia Gravis – Inflammation due to extra deposition of uric acid

7. Locomotion in lower organisms is

A. by pseudopodia

B. by cilia & flagella

C. by tentacles

D. All of the above

8. Skeletal muscle fibre is

A. Multi nucleated

B. uni nucleated

C. bi nucleated

D. anucleated

9. Which muscle is adapted to be highly resistant to fatigue ?

A. Cardiac

B. Striped

C. Unstriped

D. Voluntary

10. Which one of the following membranes secrete a watery fluid that lubricates and cushions the joint?

A. Tendons

B. Synovial membrane

C. Ligaments

D. Cartilage

11. Which of the following items gives its correct total no. ?

A. Cervical vertebrae in humans -8

B. Floating ribs in humans -4

C. Amino acids found in proteins -16

D. Types of diabetes- 3

12. Which of the following is an example of an imperfect joint?

A. Elbow joint

B. Pubic joint

C. Suture

D. Ball and socket joint

13. Which of the following is a sesamoid bone?

A. Pectoral girdle

B. Pterygoid

C. Pelvis

D. Patella

14. Which of the following is the only movable position of the skull?

A. Maxilla

B. Mandible

C. Frontal bone

D. Zygomatic bone

15. Which of these is contractile protein of a muscle?

A. Tubulin

B. Tropomyosin

C. Mysosin

D. All of these

16. The expanded portions of the _____ are Calcium storage sites.

A. Sarcoplasmic reticulum

B. Sarcoplasm

C. Neuromuscular junctions

D. Myofibrils

17. Which of the following muscles draw the lower jaw, tongue and the head backward?

A. Abductor

B. Retractor

C. Proctor

D. All of these

18. Which of the following is striped muscle but not voluntary?

A. Wrist muscle

B. Shank

C. Cardiac muscle

D. Abdominal

19. Which one of the following is correct pairing of body part and the kind of muscle tissue that moves it?

A. Iris- involuntary smooth muscle

B. Heart wall- involuntary unstriated muscle

C. Biceps of upper arm- smooth muscle fibres

D. Abdominal wall- smooth muscle

20. Which of the following bones make up the structure of the palm?

A. Metacarpal

B. Tarsal

C. Carpal

D. Phalanges

21. The supportive skeletal structures in the human external ears and nose tip are

A. Ligament

B. Areolar tissue

C. Bone

D. Cartilage

22. The two protein molecules closely associated with actin filaments are

A. Actin and Myosin

B. Actin & Tropomyosin

C. Troponin & Tropomyosin

D. Tubulin & Tropomyosin

23. Cells and their functions are matched below, which is the correct option?

A. Osteoblast- bone forming cells

B. Osteoclasts- bone absorbing cells

C. Osteoblasts- cartilage forming cells

D. both a & b are correct

24. Thoracic cage of man is formed of

A. Ribs, sternum and thoracic vertebrae

B. Ribs and thoracic vertebrae

C. Ribs, sternum and lumbar vertebrae

D. Ribs and sternum

25. Which one of the following statement is true about spongy bone?

A. Unorganised appearance

B. Lighter than compact bone

C. Surrounds the bone marrow cavity

D. All of these are correct

26. The type of muscles present in our

A. thigh are striated and voluntary

B. upper arm are smooth fibres fusiform in shape

C. heart are involuntary and unstriated smooth muscles

D. intestine are striated and involuntary

27. Motor neurons electrically stimulate nearby muscle fibres at ___

A. Creative phosphate

B. Actin filament

B. Neuromuscular junction

D. Cross- bridges

28. Chemical ions responsible for muscle contractions are

A. Na+ and Ca2+

B. Na+ and K+

C. Ca2+ and K+

D. Ca2+ and Mg2+

29. Assertion: Knee joint is the hinge type of joint

Reason: Femur, Patella and Fibula are associated with knee joint.

A. Assertion and reason, both are correct and reason is the correct explanation of assertion.

B. Assertion and reason, both are correct. But reason is not correct explanation of assertion.

C. Assertion is correct, but reason is wrong.

D. Assertion is wrong but reason is correct.

30. In hurdle race, what is the major energy source of the leg muscle?

A. Preformed ATP

B. Glycosis

C. Pyruvate & lactate

D. Oxidative metabolism

31. Which one of the followings stands incorrect regarding skeletal muscles?

A. Responsible for voluntary movement

B. Contract and expand slowly

C. Cell fibres have multiple nuclei

D. Stimulated by central nervous system

32. Which kind of joint (sutures of the cranium) is essentially immovable?

A. Cartilaginous joint

B. Fibrous joint

C. Hinge joint

D. Ball and socket joint

33. Which of the following is a wrist bone?

A. Pubis

B. Ulna

C. Carpal

D. Femur

34. Which is the largest synovial joint of the human body?

A. Knee joint

B. Shoulder joint

C. Elbow joint

D. Hip joint

35. Ilium, ischium and pubis join at the _____ to form coxal bone.

A. Acetabulum

B. Ilium

C. Sternum

D. Glenoid cavity

36. When bone becomes hard, the osteocytes are trapped in hollow chambers called

A. Osteoblasts and osteoclasts

B. Red bone marrow

C. Cartilage

D. Lacunae

37. Voluntary muscular coordination is under control of

A. Cerebellum

B. Cerebral hemisphere

C. Cerebrum

D. Medulla oblongata

38. Vertebral column extends from the skull to

A. Pectoral girdle

B. Pelvis

C. Frontal bone

D. Phalanges

39. Which molecule provides ATP during muscular contraction?

A. Creative phosphate

B. Hemoglobin

C. Myoglobin

D. Myosin

40. In a new born baby, the flat bones in its skull are separated by large spaces filled with fibrous connective tissues. These soft spots are called

A. Fontanels

B. Chitin

C. Bursae

D. Menisci

41. The segment of a myofibril between two Z-lines is called

A. Sarcomere

B. Sarcoplasm

C. Sarcolemma

D. Sarconema

42. What joint is found between the ribs and sternum?

A. Cartilaginous

B. Hinge

C. Angular

D. Fibrous

43. The joint between the atlas and axis is

A. Ball and socket joint

B. Saddle

C. Pivot

D. Angular

44. The clavicle articulates with _____ of scapula

A. Acromion process

B. Glenoid cavity

C. Acetabulum

D. Ball and socket joint

45. The contractile protein of skeletal muscle involving ATPase activity is __

A. Actin

B. Myosin

C. Troponin

D. Tropomyosin

46. Muscle fatigue sets in due to non availability of ___

A. Calcium

B. ATP

C. Actin binding site

D. Mg factor

47. Upon stimulation of skeletal muscles Calcium is immediately made available for binding to Troponin from ___

A. Blood

B. Sarcoplasmic reticulum

C. Lymph

D. Bone

48. The functional unit of contractile system in striated muscle is

A. Myosin

B. Cross bridges

C. Z band

D. Sarcomere

49. What is sarcomere?

A. part between two H-lines

B. part between two A-lines

C. part between two Z-lines

D. part between two I-bands

50. Which muscle is adapted to be highly resistant to fatigue

A. cardiac muscle

B. Striped

C. Unstriped

D. voluntary

ANSWER KEY

Q.No.	Ans	Q.No.	Ans	Q.No.	Ans	Q.No.	Ans	Q.No.	Ans
1	B	11	B	21	D	31	B	41	A
2	D	12	B	22	C	32	B	42	A
3	D	13	D	23	D	33	C	43	C
4	A	14	B	24	A	34	D	44	B
5	C	15	C	25	D	35	A	45	B
6	B	16	A	26	A	36	D	46	A
7	D	17	B	27	C	37	A	47	B
8	A	18	C	28	D	38	B	48	D

9	A	19	A	29	C	39	A	49	C
10	B	20	A	30	A	40	A	50	A

Neural Control and Coordination

1. Body coordination is maintained by

a)circulatory system

b)nervous system

c)endocrine system

d)both (b) and (c)

2. Which of the following is structural and functional unit of nervous system?

a)Axon

b)Neuron

c)Osteocyte

d)Neuroglia

3. Which of the following part of a neuron is covered by fattysheath?

a)Axon

b)Cyton

c)Dendrite

d)Node of Ranivier

4. Which matter is composed of

a)Nerve cells

b)ependymal

c)NERVE FIBRES

d)None of these

5. Myelin of the nerve fibres of the central nervous system is produced and maintained by

a)Astrocytes

b)Microglia

c)Schwann cells

d)Oligodendrocytes

6. In the resting state of the neural membrane,diffustion due to concentration gradients,if allowed would drive:

a)K + into the cell

b)Na + into the cell

c)Na + out of the cell

d)K +and Na +out of the cell

7. In medullated nerve fibre ,the conduction of impulse is faster due to the presence of

a)Pericytes

b)Nissls granules

c)endoneurium and epineurium

d)myelin sheath and node of Ranivier

8. The electrical potential difference between outside and inside of a nerve axon before excitation is known as

a)Resting potential

b)Action potential

c)Spike potential

d)Reaction potential

e)Activation potential

9. Chemicals which are released at the synaptic junction are called.

a) Lymp

b) Hormones

c) Neurotransmitters

d) Cerebrospinal fluid

10.The neurotransmitter produced at the synapse and neuromuscular junction is

a)GTP

b)ATP

c)Phosphokinase

d)Acetylcholine

11.Which of the following does not act as a neurotransmitter?

a)Tyrosine

b)Epinephrine

c)Acetylcholine

d)Glutamic acid

12. Adrenaline is equivalent to which neurotransmitter?

a) GABA

b) Serotonin

c) Epinephrine

d) Norepinehrine

13.Which one isnot a neurotransmitter?

a)Thyroxine

b)GABA

C)Acetylcholine

d)Norepinephrine

14. Membrane covering the brain and spinal cord is called:

a)meninx

b)Grey matter

c)inner meninx

d)Middle meninx

15. Arachnoid matter is:

a)neurilemmal

b)outer meninx

c)inner meninx

d)Middle meninx.

16. Cerebrospinal fluid is present:

a)between piameter and arachnoid mater

b)between the duramater and cranium

c)Between arachnoid and duramater

d)beneath the piamater

17. The supporting and nutritive cells found in the brain are:

a)Microglia

b)Astrocytes

c)ependymal cells

d)oligodendrocytes

18. Corpus callosum is found in the brain of :

a)Frog

b)pigeon

c)elephant

d)crocodile

19) Which part of brain controls intellectual ability?

a)Frontal lobe

b)Parietal lobe

c)Temporal lobe

d)Occipital lobe

20) Which of the following structures is a part of diencephalon?

a)Basal ganglia

b)Olfactory bulb

c)Hypothalamus

d)Cerebral cortex

21. In which part of the brain corpora quadrigemina is located?

a)Diencephalon

b)Mesencephalon

c)Prosencephalon

d)Rhombencephalon

22. Occipital lobe is connected with:

a)Smell

b)Vision

c)Speech

d)Sensory area

23.Vomiting centre is located in the

a)Stomach an d some times in duodenum

b)Gastro-intestinal tract

c)Medula oblongata

d)Hypothalamus.

24.Which part of human brain is concerned with the regulation of body temperature?

a)Medula oblongata

b)Hypothalamus

c)Cererbrum

d)Cerebellum

25. Hypothalmus of the brain is not involved in this function.

a)Sleep –wake cycle

b)Temperature control

c)Osmoregulation and thirst

d)Accuracy pf muscular movement

26.Which part of the brain is involved in loss of control when person drinks alcohol?

a)Thalamus

b)cerebrum

c)Pons varolii

d)Cerebellum

e)Medulla oblongata

27. During course of evolution which part of the brain has shown maximum increase in size?

a)Mid brain

b)Fore brain

c)Hind brain

d)All of these

28. Pons ,cerebellum and medulla together constitute:

a)Hind brain

b)Mid brain

c)Fore brain

d)Telencephalon

e)Cerebral hemispheres

29.Human hind brain comprises three parts,one of which is :

a)spinal cord

b)cerebellum

c)Hypothalamus

d)corpus callosum

30.Integration of the visual,tactile and auditory inputs occurs in the

a)Midbrain

b)limbic system

c)Corpus callosum

d)Medulla oblongata

e)Peripheral nervous system

31.The part of the brain where the centre for hunger and thirst located is

a)cerebrum

b)Cerebellum

c)Hypothalamus

d)Medulla oblongata

32.Comprehension of spoken and written words takes place in the region of :

a) Association area

b) Motor area

c) Wernickes area

d) Brocas area

33.All sensory path ways to the cerebral cortex synapse at the:

a)Pons

b)thalamus

b)cerebellum

d)hypothalamus

34.The part of human hind brain that is responsible for hand- eye coordination is :

a)thalamus

b)Cerebellum

c)pons varolii

d)medulla oblongata

35.The nerve centres which control the body temperature and the urge for eating are contained in :

a)Pons

b)Thalamus

c)Cerebellum

d)Hypothalamus

36.Which function will be lost due to damage of occipital lobe?

a)Hearing

b)Speech

c)Vision

d)Memory

37. Signal nerves are usually

a)mixed

b)Sensory

c)Afferent

d)efferent

38.Which is the largest bone in middle ear?

a)Incus

b)Malleus

c)Stapes

d)Cochlea

39.Reflex action is controlled by

a)Spinal cord

b)autonomic nervous system

c)peripheral nervous system

d)sympathetic nervous system.

40.Which of the following is not involved in knee –jerk reflex?

a)Brain

b) inter neurons

c)Motor neurons

d)Muscle spindle

41.Afferent nerve fibres conduct impulse from

a)CNS to receptor

b)CNS to effector

c)Receptor to CNS

d)Effector to receptor

42.The autonomic nervous system has control over:

a)Reflex action

b)Sense organs

c)internal organs

d)Skeletal muscles

e.Central nervous system.

43.The function of our visceral organs is controlled by

a)Sympathetic and parasympathetic neural system

b)Sympathetic and somatic neural system

c)Central and somatic nervous system

d)None of the above

44.Sensory neurons of retina of eye are :

a)Pacinian and Ruffinis corpuscles

b)Maculae and cristae

c)Rods and cones

d)All of the above

45.The inner most layer of the human eye is

a)choroid

b)cornea

c)sclera

d)retina

e)lens

46.Rods are sensitive to

a)Dim light

b)High intensity light

c)colour perception

d) All of these

47.The purplish red pigment rhodopsin contained in the rod type photoreceptor cells of the human eye is a derivative of

a)Vitamin A

b)Vitamic B1

C)Vitamin C

d)Vitamin D

48.The part of internal ear responsible for hearing is

a)Cochlea

b)Utriculus

c)Sacculus

d)Semicircular canal

49.Which part of the human ear plays no role in hearing as such but is otherwise very much required?

a)Ear ossicles

b)Organ of corti

c)Eustachian tube

d)Vestibular apparatus

50.Organ of corti helps in

a)Maintaining equilibrium

b)Formation of wax

c)Hearing

d)All of these

ANSWER KEY

1.d

2.b

3.a

4.c

5.c

6.b

7.d

8.a

9.c

10.d

11.a

12.c

13.a

14.a

15.d

16.a

17.c

18.c

19.a

20.c

21.b

22.b

23.c

24.b

25.d

26.d

27.b

28.a

29.b

30.a

31.c

32.c

33.a

34.b

35.d

36.c

37.a

38.b

39.a

40.a

41.c

42.c

43.a

44.c

45.d

46.a

47.a

48.a

49.d

50.c

Chemical Coordination and Integration

1. _____are responsible for chemical coordination.

(1) Neurons

(2) Nephrons

(3) Hormones

(4) Enzymes

Answer:3

2. Neural coordination is

(1) Fast and long lived

(2) Fast and short lived

(3) Slow and long lived

(4) Slow and short lived

Answer: 2

3.The ductless glands

(1) Produce non-nutrient intercellular messengers

(2) Found only in non chordates

(3) Are absent in human body

(4) Are called exocrine glands

Answer:1

4. Which of the following is an incorrect statement?

(1) Hormones are required in trace amounts

(2) Hormones are intra-cellular messengers

(3) Hormones are secreted by endocrine glandular cells

(4) Hormones are secreted in response to a particular stimulus

Answer:2

5. Which of the following glands are present in the brain?

(1) Parathyroid gland and thyroid gland

(2) Pituitary gland and thymus

(3) Hypophysis and pineal gland

(4) Pineal gland and thymus

Answer:3

6. The two glands located in the neck region are

(1) Thyroid gland and parathyroid gland

(2) Pituitary gland and pineal gland

(3) Adrenal gland and thymus

(4) Pineal gland and thyroid gland

Answer:1

7. Hypothalamus forms an important link between

(1) Digestive system and nervous system

(2) Nervous system and respiratory system

(3) Nervous system and endocrine system

(4) lntegumentary system and reproductive system

Answer:3

8. The neurosecretory cells of hypothalamus which produce hormones are called

(1) Nephrons

(2) Nuclei

(3) Granular cells

(4) Globular cells

Answer:2

9. Hypothalemic hormones directly regulate the synthesis and secretion of

(1) Thyroid hormones

(2) Pituitary hormones

(3) Adrenal hormones

(4) Parathomione

Answer:2

10. Somatostatin inhibits the release of

(1) Prolactin

(2) Melanin

(3) Thymosin

(4) Growth hormone

Answer:4

11. GnRH stimulates_____ to release_____ .

(1) Hypothalamus. gonadotropins

(2) Pituitary gland. gonadotropins

(3) Pituitary gland. growth hormone

(4) Hypothalamus. growth hormone

Answer:2

12. Which of the following is under the direct control d neurosecretory cells?

(1) Pars distalis and pars intermedia

(2) Pars intermedia and pars nervosa

(3) Pars nervosa only

(4) Pars distalis only

Answer:3

13. The neuroendocrine structure is

(1) Hypothalamus

(2) Adrenal cortex

(3) Pancreas

(4) Thyroid

Answer:1

14. Adenohypophysis in humans consists of two portions

(1) Pars distalis and Pars nervosa

(2) Pars intermedia and Pars distalis

(3) Pars nervosa and Pars intermedia

(4) Anterior and posterior pituitary

Answer:2

15. Which of the following hormones is not released by pars distalis,in frog?

(1) Growth homone

(2) Prolactin

(3) Melanocyte stimulating hormone

(4) Luteinizing hormone

Answer:3

16. Melanocyte stimulating hormone in frog is released by

(1) Hypothalamus

(2) Pars nervosa

(3) Pars distalls

(4) Pars intermedla

Answer:4

17. The hormone which promotes protein anabolism, absorption of calcium from the bowel and retards use of blood glucose for ATP production

(1) Melatonin

(2) Adrenaline

(3) Growth hormone

(4) Insulin

Answer:3

18. Dwarfism occurs when there is

(i) Over secretion of growth hormone

(ii) Under secretion of growth hormone

(iii) Over secretion of somatostatin

(iv) Under secretion of somatostatin

(1) (i) and (iii)

(2) Only (ii)

(3) (ii) and (iii)

(4) (ii) and (iv)

Answer:3

19. Which of the following hormones is responsible for gigantism?

(1) Growth hormone

(2) Somatostatin

(3) Adrenaline

(4) GnRH

Answer:1

20. Prolactin activates

(1) Growth of breasts and secretion of milk in mammary glands

(2) Secondary sexual characters in males

(3) Melatonin secretion

(4) Estrogen secretion

Answer:1

21. ACTH controls the secretion of

(1) Insulin

(2) Norepinephrine

(3) Epinephrine

(4) Glucocorticoids

Answer:4

22. If 'X' is a hormone which controls the carbohydrate metabolism in the body and 'Y' is a hormone which controls the secretion of 'X', then 'X' and 'Y' are

(1) insulin and somatotrophin

(2) Aldosterone and growth hormone

(3) Glucocorticoid and ACTH respectively

(4) Glucocorticoid and GHRH

Answer:3

23. In females. LH stimulates _____in the ovary to _____secrete .

(1) Graafian follicle, lCSH respectively

(2) Graahan follicle, prolactin respectively

(3) Corpus luteum, FSH respectively

(4) Corpus luteum, progesterone respectively

Answer:4

24. Graafian follicle gets converted into_____ after ovulation under the effect of _____

(1) Corpus callosum, GnRH

(2) Corpus luteum, LH

(3) Corpus albicans, FSH

(4) Ovarian follicle, prolactin

Answer:2

25. Which of the following is incorrect w.r.t. neurohypophysis?

(1) Neurohypophysis is also called pars nervosa

(2) it synthesises two hormones, oxytocin and vasopressin

(3) It receives neurohormonesdirectty from neurosecretory cells

(4) It comprises 25% portion of pituitary gland

Answer:2

26. P is a small, round, reddish structure located on the dorsal side of forebrain. It contains a staik and releases a hormone Q which controls diurnal rhythm of the body. P and Q are

(1) Hypothalamus, MSH respectively

(2) Pineal gland, melanin respectiveiy

(3) Pineal gland. melatonin respectively

(4) Pituitary gland, MSH respectively

Answer:3

27. A hormone which maintains BMR, regulates the metabolism of proteins and erythropoiesis is

(1) Adrenaline

(2) Thymine

(3) Thyroxine

(4) Thymosin

Answer:3

28. Cretinism can be prevented or cured by the administration of

(1) Renin

(2) Aldosterone

(3) Glucagon

(4) Thyroxine

Answer:4

29. A gland X is present over the surface of another gland Y, latter secretes a hormone that controls the metabolism of proteins. fats and carbohydrate.

The X and Y are

(1) Parathyroid and thyroid gland. respectively

(2) Pituitary and hypothalamus, respectively

(3) Adrenal gland and kidney. respectively

(4) Thymus and heart, respectively

Answer:1

30. Ram has high level of calcium in his blood. Excess of which hormone can cause this effect?

(1) Thyrocalcitonin

(2) Growth hormone

(3) Parathormone

(4) lnsulin

Answer:3

31. Angiotensinogen —x—-> Angiotensin-l.

(A) (B)

'X' in the given statement refers to

(1) Angiotensin-ll

(2) Aldosterone

(3) Renin

(4) Rennin

Answer:3

32. The secretin promotes the release of

(1) HCl and sodium carbonate ions

(2) HCl and bicarbonate ions in gastric juice

(3) Water and bicarbonate ions in pancreatic juice

(4) Pancreatic enzymes and mucus

Answer:3

33. CCK is secreted by

(1) Duodenum

(2) Pyloric part of stomach

(3) Caecum

(4) Rectum

Answer:1

34. Progesterone and estradiol are

(1) Peptide hormones

(2) Amino acid derivatives

(3) iodothyronines

(4) Steroid hormones

Answer:4

35. Which of the following forms a hormone receptor complex on the cell membrane?

(1) Cortisol

(2) Testosterone

(3) insulin

(4) Progesterone

Answer:3

36. Which of the following can be included under heterocrine glands?

(1) Thyroid and parathyroid

(2) Pineal gland

(3) Gonads and pancreas

(4) Thymus

Answer:3

37. Regulating hormones from hypothalamus reach Adeno-hypophysis through

(1) Neuron

(2) Neuroendocrine cells

(3) Portal blood vessel

(4) Diffusion

Answer:3

38. The anterior pituitary hormone that does not Stimulate another endocrine gland is

(1) Somatotrophin

(2) Thyrotrophin

(3) Gonadotrophin

(4) Adrenocorticotrophin

Answer:1

39. Luteinising hormone (LH) in female

(1) Helps in the appearance of secondary sexual characters

(2) Stimulates ovary to secrete oestradiol

(3) Helps in release of the ovum from the ovary

(4) Controls the blood pressure

Answer:3

40. On surgical removal of pituitary gland there is fall in levels of glucocorticoids and sexcorticoids. This is due to

(1) Oxytocin is no longer available from pituitary

(2) Atrophy of adrenal medulla

(3) Atrophy of adrenal cortex

(4) LTH from pituitary is no longer available

Answer:3

41. Which pituitary hormone is responsible for enhancing the arterial blood pressure by causing narrowing of arterioles?

(1) ACTH

(2) Somatotropin

(3) ADH

(4) LTH

Answer:3

42. Largest endocrine gland is

(1) Thyroid gland

(2) Adrenal gland

(3) Thymus

(4) Pituitary gland

Answer:1

43. Failure of thyroid secretion from infancy leading to dwarfism and mental retardation is included under

(1) Grave‘s disease

(2) Cretinism

(3) Simple goitre

(4) Myxoedema

Answer:2

44. Name the non-iodinised hormone secreted by parafollicular cells of thyroid

(1) Calcitonin

(2) Oxytocin

(3) Vasopressin

(4) Gonadotropin

Answer:1

45. Symptoms like pot-bellied, pigeon like chest, protruding tongue and mental retardation are of

(1) Myxoedema

(2) Cretinism

(3) Cushing's Syndrome

(4) Addison's disease

Answer:2

46. Hyposecretion of which hormone is responsible for cretinism?

(1) Thyroxine

(2) Parathormone

(3) Growth Hormone

(4) Calcitonin

Answer:1

47. Increase in the excitability of nerves and muscles leading to sustained contraction of the muscles of larynx, face, hand and feet is due to

(1) Hyper activity of thyroid

(2) Hyper activity of parathyroid

(3) Hypoactivity of thyroid

(4) Hypoactivity of parathyroid

Answer:4

48. Hormone secreted during allergy is

(1) Glucocorticoid

(2) Mineralocorticoid

(3) Insulin

(4) Thyroxine

Answer:1

49. Deficiency of the adrenal cortex activity leads to

(1) Cushing's disease

(2) Conn's syndrome

(3) Addison's disease

(4) Simmond's disease

Answer:3