

Name : _____ Sec : _____ Roll No. _____

Time : 90 minutes

M.M. : 35

General Instructions :-

- The question paper has three sections.
- Section A has 24 questions. Attempt any 20 questions.
- Section B has 24 questions. Attempt any 20 questions.
- Section C has 12 questions. Attempt any 10 questions.
- All questions carry equal marks.
- There is no negative marking.
- In case more than desirable number of questions are attempted, only the first required no. of questions will be checked and remaining will be cancelled.

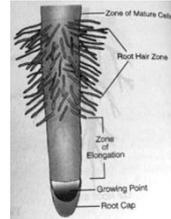
Section-A

(Section-A has 1 to 24 questions. Attempt any 20 questions)

1. Enzymes are biocatalysts they catalyse biochemical reactions, In General, they reduce, activation energy of reactions many physicochemical processes are enzyme mediated. Some enzyme mediated reactions are given below. Tick the wrong entry.
- Dissolve CO_2 in water
 - untwinding the two strands of DNA
 - Hydrolysis of sucrose
 - Formation of peptide bond
2. Quaternary structure of protein has
- Four subunits
 - Either α or β form
 - no relation to protein function
 - Depends on primary structure of individual polypeptides
3. Match column 1 and column II :-
- | | <u>Column I</u> | <u>Column II</u> |
|----|-----------------|------------------|
| a) | Parapodia | 4) Protozoa |
| b) | choanocyte | 2) mollusca |
| | | 3) Annelida |
| | | 1) Porifera |
- a-4, b-2
 - d-3, b-1
 - a-2, b-1
 - a-1, b-3
4. Which of the following feature is not present in phylum arthropoda ?
- jointed appendages
 - Chitinous exoskeleton
 - Metameric segmentation
 - Parapodia

5. A polysaccharide with B-glycosidic bonds is -
 a) starch b) sucrose c) glycogen d) cellulose
6. The most abundant protein in animal world is -
 a) insulin b) collagen c) Trypsin d) Haemoglobin
7. Transition state structure of substrate formed during an enzyme reaction is -
 a) permanent and stable
 b) Transient but stable
 c) Permanent but unstable
 d) Transient and unstable
8. Placenta and pericarp are both edible in
 a) Banana b) Tomato c) potato d) Apple
9. Rearrange the following zones as seen in the root in vertical section and choose the correct option.

- a) Root hair zone
 b) zone of meristem
 c) root cap zone
 d) zone of maturation
 e) zone of elongation



Options

- a) c, b, e, a, d b) a, b, c, d, e c) d, e, a, c b d) e, d, c, b, a
10. The mature seeds of plants such as gram and peas possess no endosperm, because.
 a) These plants are not angiosperms
 b) There is no double fertilization in these
 c) Endosperm is not formed in them
 d) Endosperm gets used up by the developing embryo during seed development.
11. Trimerous flowers with superior ovary having axile placentation occurs in
 a) liliaceae b) solanaceae c) Fabaceae d) None of the above
12. Match the following and choose the correct option :-
- | | |
|----------------------------|-----------------|
| a) Adipose tissue | i) Nose |
| b) stratified epithelium | ii) Blood |
| c) Hyaline cartilage | iii) skin |
| d) Fluid connective tissue | iv) Fat storage |
- a) a-i, b-ii, c-iii, d-iv
 b) a-iv, b-iii, c-i, d-ii
 c) a-iii, b-i, c-iv, d-ii
 d) a-ii, b-i, c-iv- d-iii
13. Nerve cells do not divide as they lack
 a) nucleus b) mitochondria c) golgi bodies d) centrosome
14. Areolar connective tissue joins
 a) Bones with bones b) integument with muscles
 c) Fat body with muscles d) Bones with muscles
15. What is a tonoplast ?
 a) outer membrane of mitochondria
 b) inner membrane of chloroplast
 c) membrane boundary of the vacuole of plant cells.
 d) Cell membrane of plant cell.

16. Which of the following statement is not true for plasma membrane.
- It is present in both plant and animal cells.
 - Lipid is present as a bilayer in it.
 - Proteins are present integrated as well as loose associated with the lipid layer.
 - Carbohydrate is never found in it.
17. Ribosomes are synthesized in -
- Nucleoplasm
 - Nucleolus
 - Golgi Appartus
 - Cytoplasm
18. Five kingdom classification is based on-
- cell wall
 - Genetic material
 - Types of organelles
 - mode of nutrition
19. Which of the following statement is wrong for virioids -
- R.N.A. is of high molecular weight.
 - They lack a protein coat
 - They are smaller then viruses
 - They cause infections
20. Sexual reproduction is not found in
- Basidiomycetes
 - Phycomycetes
 - Ascomycetes
 - Dueteromycetes
21. A dikaryon is formed when
- Meiosis is arrested
 - The two haploid cell do not fuse completely
 - Cytoplasm does not fuse.
 - None of the above
22. Protonema is -
- Haploid and is found in mosses
 - Diploid and is found in liverwort
 - Diploid and is found in pteridophytes
 - Haploid and is found in pteridophytes.
23. A condition in which internal environment of the body remains constant is -
- Hematoma
 - Haemoposis
 - Homeostasis
 - Hemostasis
24. Which originated first.
- Prokaryotic cell
 - Eukaryotic cell
 - Green alga
 - None of these

Section -B

(Section-B has 25 to 48 questions. Attempt any 20 questions)

25-29 : Assertion Reasons.

- Both Assertion and Reason are True, and Reason is the correct explanation of Assertion.*
 - Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.*
 - Assertion is true but Reason is false.*
 - Both Assertion and Reason are false.*
25. Assertion : Whittaker(1969) was pioneer taxonomist who were able to arrange living organism's according to their natural relationship.
Reason- He created the Five Kingdoms of monera, protista, Fungi, Plantae and animalia

26. Assertion : Virioids are infectious RNA particles, they cause diseases in plants.
Reason : A protein covering is absent, there is single stranded RNA which appear double stranded due to complementary pairing.
27. Assertion : Algae are non- Vascular photosynthetic aquatics, which reproduce both sexually and asexually.
Reason : Sexual reproduction in algac is by gonads.
28. Assertion- Porifera is characterized by primitives multicellular structure, pores, cell aggregate, diploblastic constitution.
Reason- Sponges have outer cellular layer called dermal layer, has pores, inner cellular layer is called choanocytes layer.
30. Metagenesis refers to.
A. Presence of different morphic forms.
B. Alteration of generation between asexual and sexual phases an organism .
C. Occurance of drastic changes in form during post embryonic development.
D. Prescence of a segmented body and parthenogenetic mode of reproduction.
31. Which one shows correct combination of organisms, its phylum and salient features.
A. Hydra- Coelentrata – Bilateral symmetry- Cnidoblasts present.
B. Planaria- Platyhelminthes – Bilateral symmetry High regeneration capacity.
C. Anclystoma – Annelida- Bilateral symmetry- elongated worm like.
D. Octopus- Mollusca- Radial symmetry- External shell present.
32. Identify the vertebrate group of animals characterized by crop and gizzard in its digestive System.
A. Aves
b. Reptiles
C. Amphibia
D. Osteichthyes.
33. Which of the following biomolecules does have a phosphodiester bond.
A. Fatty acid in a diglyceride
B. Monosaccharide in a polysaccharide.
C. Aminoacid in a polypeptide.
D. Nucleotide in a nucleic acid.
34. A homopolymer has only one type of building blocks called monomer repeated 'n' number of times. A hetro polymer has more than one type of monomer. Proteins are heteropolymers made of aminoacids. While a nucleic acid like DNA or RNA is made of only 4 types of nucleoside monomers. Proteins are made of –
A. 20 types of monomers
B. 40 types of monomers
C. 3 types of monomers
D. Only one type of monomers
35. Which statement is correct with reference to enzymes.
A. Apoenzyme = Holoenzyme + Coenzyme
B. Holoenzyme = Apoenzyme+ Holoenzyme
C. Coenzyme = Apoenzyme + Holoenzyme
D. Holoenzyme = Coenzyme + Cofactor
36. In bryophytes and pteridophytes , the transport of male gametes requires
A. Water
B. Wind
C. Insect
D. Bird

37. Which ones are homosporous.
A. Salvinia, Equisetum
B. Salvinia, Lycopodium
C. Lycopodium, Equisetum
D. Salvinia, Selaginella
38. Holdfast, stipe and frond constitute the plant body in case of.
A. Rhodophyceae
B. Chlorophyceae
C. Phaeophyceae
D. All of the above
39. Ovary is inferior in
A. Hypogynous condition
B. Epigynous condition
C. Perigynous condition
D. None of the above
40. Venation is a term used to describe the pattern of arrangement of.
A. Floral Organ
B. Veins and veinlets in a lamina
C. Sepals / Petals
D. Flower in inflorescence
41. Certain members of euglena group of _____ can lead _____ life.
Select the correct option, with reference to the above blanks :-
A. Monera, single
B. Protista, dual
C. Protista, Single
D. Monera dual
42. Fusion of two gametes which are dissimilar in size is termed as
A. Oogamy
B. Isogamy
C. Anisogamy
D. Zoogamy
43. Main component of fungal cell wall is.
A. Cellulose
B. Pectin
C. Dextrin
D. Chitin
44. A unicellular sac fungus is.
A. Claviceps
B. Aspergillus
C. Saccharomyces
D. Penicillium
45. Tendon and ligaments are specialized types of epithelial tissues-
A. Epithelia tissues
B. Connective tissues
C. Muscular tissues
D. Nerve tissues

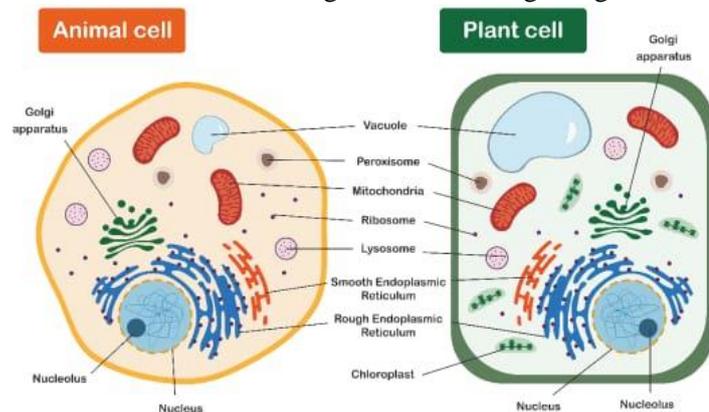
46. Which is absent in connective tissues
 A. Collagen Fibre
 B. Basement Membrane
 C. Hyaluronic acid
 D. Fluid
47. Phycoerythrin, chlorophyll a and chlorophyll d occur in
 A. Chlorophyceae
 B. Phaeophyceae
 C. Xanthophyceae
 D. Rhodophyceae
48. The living organism can be unexceptionally distinguished from the non –living things on the basis of their ability for-
 A. Reproduction
 B. Growth and movement
 C. Responsiveness to touch
 D. Interaction with environment and progressive evolution.

SECTION – C

(Section-C has 49 to 60 questions. Attempt any 10 questions)

Case based questions

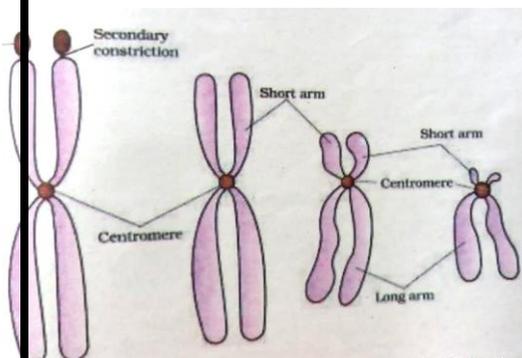
Cells are the basic building blocks of living things. The human body is composed of trillions of cells, all with their



own specialised function. Cells are the basic structures of all living organisms. Cells provide structure for the body, take in nutrients from food and carry out important functions. Cells group together to form tissues, which in turn group together to form organs, such as the heart and brain. Our cells contain a number of functional structures called organelles. These organelles carry out tasks such as making proteins, processing chemicals, and generating energy for the cell. The nucleus is based at the centre of the cell and is the ‘control room’ for the cell. The genome is found within the nucleus.

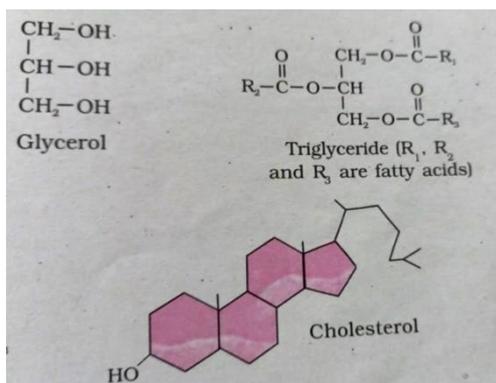
49. Endoskeleton of cell is.
 A. Cell wall
 B. Endoplasmic reticulum
 C. Cytoplasm
 D. Mitochondria
50. Golgi complex participates in-
 A. Respiration in bacteria
 B. Formation of secretory vesicles
 C. Fatty acid breakdown
 D. Activation of Amino acid
51. Cellular Organelles with membranes are
 A. Nucleic, ribosomes and mitochondria
 B. Chromosomes, ribosomes and E.R
 C. E.R, Ribosomes and nuclei
 D. Lysosomes/ Golgibodies and mitochondria

52. In animal cell, lipid like steroidal hormones are synthesized over -
 A. Rough Endoplasmic reticulum
 B. Golgi apparatus
 C. Smooth endoplasmic reticulum
 D. Lysosomes
53. What is true about ribosomes.
 A. Prokaryotic Ribosomes are 80S
 B. They are composed of RNA and Proteins
 C. Found only in Eukaryotic cell.
 D. Self splicing introns of some RNA's
54. Which cellular part is correctly described
 A. Thylakoids- Flattened membranous sacs forming grana
 B. Centrioles- Sites for active RNA synthesis
 C. Ribosomes – smaller 70s in cytoplasm and larger in 80s in Chloroplasts
 D. Lysosomes – Optically active at 8.5ph
55. Tick the correct statement with reference to chromosomes.



- A. Every chromosomes essentially has no constriction.
 B. Based on the position of centromere chromosomes can be classified into two types.
 C. Based on the position of arms they chromosomes can be of three types.
 D. Metacentric chromosomes has middle centromere forming two equal arms of the chromosomes.

56. Select the correct statement with reference to Fats.

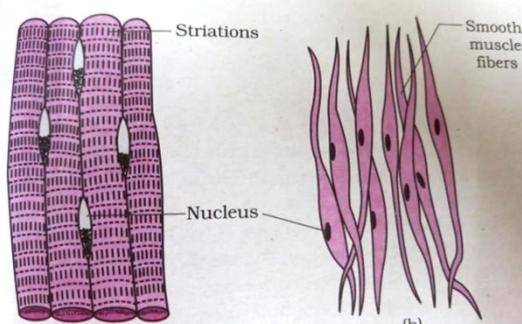


- A. A fatty acid has a glucose group attached to R group.
 B. Some Simple lipids are glycerol which is trihydroxy propane.
 C. Many lipids have both glycerol and fatty acids.
 D. Lipids are generally soluble in water.
 E. None of the above.

57. Archaeobacteria differ from eubacteria in -
 A. Cell shape
 B. Mode of reproduction
 C. Mode of nutrition
 D. Cell membrane structure

58. The organisms which lack a cell wall and can live without oxygen are -
- A. Thermoacidophiles
 - B. Methanogens
 - C. Archaeobacteria
 - D. Mycoplasmas

59. Select the incorrect statement .



- A. Smooth muscle fibres taper at both ends
- B. Cell junctions hold them together. they are involuntary.
- C. Skeletal muscles are bundled together in a parallel fashion. they are voluntary.
- D. Smooth muscles are only found in heart.

60. The parasite completes its life cycle in a single host
- A. Taenia solium
 - B. Plasmodium vivax
 - C. Fasciola hepatica
 - D. Ascaris