

I PUC MID-TERM EXAMINATION, OCT./NOV - 2024

SUBJECT : BIOLOGY (36)

TIME : 3 Hours

Max. Marks : 70

General Instructions:

1. The question paper consists of four parts A, B, C and D.
2. PART-A consists of I & II and Part-D consists of two parts V and VI
3. All the parts are compulsory.
4. Answers for PART-A, written in the first two pages of the answer booklets are only considered for evaluation.

PART-A

I Select the correct alternative from the choices given below: **15x1=15**

- 1) The scientific name
 - a) should be underlined separately when printed
 - b) should be in italics when printed
 - c) should be in capital letters when handwritten
 - d) should be printed such that generic and specific names are underlined together
- 2) A Symbiotic association of fungus and roots of higher plants is called
 - a) Mycoplasma
 - b) Mycorrhiza
 - c) Lichen
 - d) Epiphyte
- 3) The smallest flowering plant (angiosperm) on Earth
 - a) Alstonia
 - b) Cassia
 - c) Canna
 - d) Wolffia
- 4) Adults are radially symmetrical but larvae are bilaterally symmetrical in
 - a) Mollusca
 - b) Aschelminthes
 - c) Echinodermata
 - d) Playthelminthes
- 5) Identify the incorrect statement / statements from the following
 - i) Annelids exhibit metamerism
 - ii) Sponges have water vascular system
 - iii) Echinoderms are spiny skinned animals
 - iv) Amphibians show internal fertilization
 - a) only (i)
 - b) (ii) and (iv)
 - c) (i), (ii) and (iii)
 - d) (i) and (iii)
- 6) Staminode is a
 - a) Sterile stamen
 - b) Fertile stamen
 - c) Epipetalous stamen
 - d) Epiphylous stamen
- 7) Partially digested food in the stomach of frog is called
 - a) Mesorchium
 - b) Chyme
 - c) Chiasma
 - d) Mesosome
- 8) The membrane of vacuole is called
 - a) Protoplast
 - b) Leucoplast
 - c) Tonoplast
 - d) Elaioplast
- 9) A biomolecule that is present in acid-insoluble fraction which has molecular weight less than 1000 daltons is
 - a) Protein
 - b) Nucleic acid
 - c) Polysaccharide
 - d) Lipid
- 10) Asters are formed during
 - a) S-phase
 - b) G-2
 - c) Prophase
 - d) Metaphase
- 11) Statement A : In roundworms, body cavity is not lined by mesoderm, instead the mesoderm is present as scattered pouches in between ectoderm and endoderm.
Statement B : Roundworms are called Pseudocoelomate animals
 - a) both the statements A and B are correct and A is the reason for B
 - b) both the statements A and B are correct and A is the not reason for B
 - c) Statement A is wrong and statement B is correct
 - d) Statement A is correct and statement B is wrong

(P.T.O)

- 12) When ovules are attached to the inner wall or peripheral part of the ovary in a flower, the placentation is called
 - a) Axile placentation
 - b) Marginal placentation
 - c) Free central placentation
 - d) Parietal placentation
- 13) Elaioplasts are a types of leucoplasts which store
 - a) Carbohydrates
 - b) Proteins
 - c) Oils and fats
 - d) Nucleic acids
- 14) The enzyme which catalyses the following reaction where S and S' are substrates and 'G' is a group

$$S - G + S' \longrightarrow S + S' - G$$
 - a) Transferase
 - b) Isomerase
 - c) Hydrolase
 - d) Lyase
- 15) Mesosomes in Bacteria help in
 - a) Locomotion
 - b) Provide resistance to antibiotics
 - c) Cell wall formation
 - d) attachment to rocks and streams

II Fill in the blanks by choosing the appropriate word/words from those given below: 5x1=5
(Perianth, Pedicel, Chlorella, Synaptonemal complex, Conus arteriosus, 70S)

- 16) _____ is a unicellular algae rich in proteins which is used as food supplement even by space travellers.
- 17) When calyx and corolla in a flower are not distinct, a collective term called _____ is used.
- 18) In frog, the ventricle opens into a sac like structure called _____ on the ventral side of the heart.
- 19) Ribosomes in prokaryotes are of _____ type.
- 20) During Zygotene stage of Meiosis _____ is formed between homologous chromosomes.

PART-B

III Answer any FIVE of the following questions in 3-5 sentences each, wherever applicable: 5x2=10

- 21) Name the two types of animals based on the number of Germ layers.
- 22) Write two examples of Poikilothermic animals.
- 23) Explain the vascular bundles of Dicot stem.
- 24) State Cell Theory.
- 25) Mention the components of Endomembrane system.
- 26) Name the bond present between two
 - a) Amino acids
 - b) Nucleotides
- 27) Meiosis increases the genetic variability in the population. Justify.

PART-C

IV Answer any FIVE of the following questions in about 40-80 words each, wherever applicable: 5x3=15

- 28) Write the taxonomic hierarchy of Man.
- 29) Who proposed five kingdom classification? What are the criteria for the classification used by him?
- 30) Write the economic importance of Mosses.
- 31) List the distinguishing characters of Family Solanaceae.
- 32) Explain the respiratory system of Frog.
- 33) Write three differences between Prokaryotic and Eukaryotic cell.

- 34) Name the following
- A storage polysaccharide of animal cell
 - Polysaccharide that prevents blood clotting inside blood vessels.
 - Polysaccharide found in exoskeleton of insects

PART-D

V Answer any FOUR of the following questions in about 200-250 words each, wherever applicable: 4x5=20

- 35) Give a comparative account of the classes of Kingdom Fungi under the following :
- Mode of nutrition
 - Mode of reproduction.
- 36) Describe the important characteristics of Gymnosperms.
- 37) Mention the function of the following and write the name of the phylum to which these structures belong to :
- Parapodia
 - Air-bladder
 - Flame cells
 - Radula
 - Book-gills
- 38) Write the differences between Chondrichthyes and Osteichthyes.
- 39) Draw a neat labelled diagram of a Dorsiventral leaf.
- 40) Describe the structure of the Chloroplast with a neat labelled diagram.
- 41) Classify the enzymes based on the type of reactions they catalyse.

VI Answer any ONE of the following questions in about 200-250 words each, wherever applicable: 1x5=5

- 42) Describe the arrangement of floral members in relation to their insertion on Thalamus.
- 43) What is Centromere ? How does the position of Centromere form the basis of classification of chromosomes. Support your answer with diagrams showing the position of centromere on different types of chromosomes.
- 44) Name the stage of cell cycle at which one of the following events occur :
- Chromosomes are moved to spindle equator
 - Centromere splits and chromatid separate
 - Crossing over between homologous chromosomes takes place.
 - Pairing between homologous chromosomes takes place.
 - Meiosis ends in which two groups of chromosomes once again gets enclosed by a nuclear envelope.
