

2020

Gurudas College

ZOOLOGY – HONOURS

Paper: CC-4

Full Marks: 60

Time: 2 hrs. 30 mins.

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Part A

Answer **any twenty five** questions from the following:

2x25

1. Mention the role of flippase
2. Write down the full form of ERGIC and ERES.
3. Compare carrier protein and channel protein.
4. Write 2 function of cytoskeleton
5. How is polarity obtained in microfilament?
6. Name 2 lysosome storage disease
7. Compare Robertson's unit membrane with Fluid Dynamic Mosaic model.
8. Who proposed fluid dynamic mosaic model in which year?
9. Name the different kind of movements in membrane lipid
10. Mention any 2 functions of Golgi bodies.
11. What is the function of taxol?
12. Name the different regions of Golgi bodies.
13. Why ATP synthase is called a molecular machine?
14. What do you mean by prosthetic group?
15. Write the function of peroxisome.
16. What is PCM?
17. What is the function of NPC?
18. Write the major components of nucleolus?
19. What is the major difference between euchromatin and heterochromatin?
20. What is the basic difference of DNA packaging in Prokaryotes and Eukaryotes?
21. Write the function of ubiquinone.
22. Which organelles are called semiautonomous organelle and why?
23. What is the difference between chromatid and chromatin?
24. Write two features of apoptotic cells.
25. Distinguish between benign tumor and malignant tumor.
26. What are oncogene and tumor suppressor gene?
27. Explain how programmed cell death is associated with cancer?
28. What are death receptors?
29. What is haploinsufficiency?
30. What is "loss of contact inhibition" of malignant cells?
31. State about the cell cycle check points?
32. What is MPF?
33. State the function of APC in eukaryotic cell cycle.
34. Explain the process of G2-M transition in cell cycle.
35. Mention only the steps of receptor tyrosine kinase pathway.

Part B
Internal Assessment

Choose the correct alternative for *any ten* from the following:

1x10

1. Microtubules are formed of

- a) Clathrin
- b) Keratin
- c) Tubulin
- d) Actin

2. Lysosomal membrane is rich in

- a) Cardiolipin
- b) Sialic acid
- c) Sterols
- d) All of those

3. The structure of integral membrane protein is studied by

- a) Atomic force microscopy
- b) Cryo-sectioning
- c) Freeze fracture technique & Electron microscopy
- d) All of those

4. Which of the following vesicle transport protein from ER to Golgi apparatus

- a) COP I
- b) COP III
- c) Clathrin
- d) COP II

5. N-linked glycosylation plays important role in

- a) Protein sorting
- b) Cell signalling
- c) Protein folding
- d) Lipid metabolism

6. Mt DNA is

- a) Simple single stranded circular DNA molecule
- b) Simple double stranded circular DNA molecule
- c) Simple double stranded linear DNA molecule
- d) Simple single stranded linear DNA molecule

7. Which of the following embedded enzyme in the peroxisomal membrane is involved to in the activation of fatty acids before the beta-oxidation?

- a) Fatty acid dehydrogenase
- b) 3-ketothiolase
- c) Acyl- CoA oxidase
- d) Acyl – CoA synthase

8. The main structure of centriole is

- a) 9+3 fibrils
- b) 9+2 fibrils
- c) 9 triplets
- d) 13 globular subunits

9. Find out the incorrect statement

- a) Nucleoli are synthesised around nucleolar organizing regions
- b) Only one nucleolus is found in the nucleus
- c) Transcription of rDNA occurs in the fibrillar centre
- d) Nucleolus contains a high concentration of iron in various plant species

10. The modifications of histones can effect

- a) Transcription
- b) Gene expression
- c) Both A and B
- d) Translation

11. Mention which of the followings is an event in G1 phase of cell cycle:

- a) Active cyclinB1-CDK1 phosphorylates and modulates the action of Wee1 and the Cdc25 isoforms.
- b) Cyclin D-CDK4 complex phosphorylates the retinoblastoma protein (Rb).
- c) Nuclear envelope breaks and some of the spindle microtubules attach to chromosomes through kinetochores.
- d) DNA replicates and the amount of DNA in the cell has effectively doubled.

12. Which of the followings is known as anti-apoptotic protein?

- a) Bax
- b) Caspase-9
- c) Bcl-2
- d) Bid

13. Caspases are:

- a) Metalloproteases
- b) Aspartic proteases
- c) Cysteine proteases
- d) Glutamic proteases

14. Cancer which begins in the skin or in tissues that line or cover internal organs is called:

- a) Leukemia
- b) Carcinoma
- c) Sarcoma
- d) Glioma

15. The spread of cancer cells from the place where they first formed to another part of the body is called

- a) Angiogenesis
- b) Promotion
- c) Metastasis
- d) Transformation