AMRITA VIDYALAYAM ANNUAL EXAMINATION 2019 - 20

Class : XI

Marks : 70 Time : 3 hrs

BIOLOGY (044)

GENERAL INSTRUCTIONS:

- 1. There are a total of 27 questions and five sections in the question paper. All questions are compulsory.
- 2. Section A contains questions 1 to 5, multiple choice questions of 1 mark each.
- 3. Section B contains questions 6 to 12, short answer type I questions of 2 marks each.
- 4. Section C contains questions 13 to 21, short answer type II questions of 3 marks each.
- 5. Section D contains questions 22 to 24, case based short answer questions of 3 marks each.
- 6. Section E contains questions 25 to 27, long answer type questions of 5 marks each.
- 7. There is no overall choice in the question paper. However, internal choices are provided in two questions of one mark, one question of two marks, two questions of three marks and all three questions of five marks. An examinee is to attempt any one of the questions out of the two given in the question paper with the same question number.

SECTION-A

Cardiac output is defined as the amount of blood ______.
 (pumped by both ventricle per second, received in heart per minute, pumped by each ventricle per minute, pumped by left atrium per second)

OR

Which is known as the pacemaker of the heart?

(atrio ventricular node, sino atrial node, purkinje fibres, Bundle of His)

2. Which of the following element is not essential for plants? (Iron, Zinc, Potassium, Iodine)

OR

(study of the development of soil, study of aquatic plants, growth of plants in liquid culture medium, growing plants in laboratory)

- A pregnant female delivers a baby, who suffers from stunted growth with low 22 intelligence quotient and abnormal skin. This is the result of ______.
 (deficiency of iodine in diet, low secretion of growth hormone, cancer of the thyroid gland, over secretion of pars distalis)
- 4. Chiasma formation occurs in _____. (pachytene, zygotene, leptotene, diplotene)

Hydroponics is a method of _____

5. Metamerism is characterized by ______ (Platyhelminthes, Mollusc, Porifera, Annelida)

SECTION - B

6. Name the target gland of the following hormones.a) PTHb) oxytocinc) melatonin

d) epinephrine

OR

How are hormones classified on the basis of their chemical nature?

- 7. What is vernalisation? Give its significance.
- 8. The gametophytes of bryophytes and pteridophytes are different from that of gymnosperms. How?
- Fill in the space left blank in the given table. 9.

Characteristics	c_3 plants	c_{A} plants
cell type	mesophyll	
co, acceptor		PEP
primary product	3-PGA	
example	barley	

- 10. Define RQ. What is its value for fats?
- 11. How does the position of centromere form the basis of classification of chromosome?
- 12. Name the stage of mitotic division at which the following events occur.
 - a) Centromere split and chromatids separate.
 - b) Nuclear envelop assemble around the chromosome clusters.
 - c) Chromosomes are arranged on the equatorial plane.
 - d) Condensation of chromatin material.

SECTION - C

- Give the floral formula and draw floral diagram of Solanum nigram. 13.
- What is mesosome? Write its functions. 14.
- 15. Give the diagrammatic representation showing the life cycle of an angiosperm.

OR

What is heterospory? Briefly comment on its significance. Write two examples.

- 16. Differentiate between class chondrichthyes and class osteichthyes.
- Describe the arrangement of floral members in relation to their insertion on thalamus. 17.
- What are the conditions necessary for fixation of atmospheric nitrogen by rhizobium? What is their 18. role in nitrogen fixation?
- 19. What is resting membrane potential of a neuron? How does resting potential change into action potential?
- 20. a) What do you mean by secondary structure of protein?
 - b) Give one example for quaternary structure of protein.
 - c) Which structure is necessary for many biological activities of proteins?

OR

What are cofactors? Explain different kinds of cofactors.

21. Mention the steps involved in the coagulation of blood.

22.





A diagrammatic view of cell cycle is drawn above. Study the diagram and answer the following questions.

- a) What is the M phase of cell cycle? Mention its two events.
- b) What happens during S phase?
- c) What is the average cell cycle span for a mammalian cell? Which of the phase of cell cycle is of longest duration?
- 23. A farmer grows cucumber plants in his field. He wants to increase the number of female flowers in them to increase the yield.
 - a) Which plant growth regulator can be applied to achieve this?
 - b) Which is the most widely used compound as its source?
 - c) What is respiratory climactic?
- 24. Given figure shows the effect of light on the rate of photosynthesis. Based on the graph, answer the following questions.



- a) At which point (A, B or C) in the curve is light a limiting factor?
- b) What is Law of Limiting Factors? Who put forth it?
- c) How do increase in incident light decrease the rate of photosynthesis?

SECTION - E

25. Give the schemmatic representation of glycolysis.

26.

OR

- Explain Electron Transport System and oxidative phosphorylation.
- a) Name the cells present in the retina of an eye.
- b) What is the difference between aqueous chamber and vitreous chamber of an eye.
- c) What do you mean by limbic system of brain? Write its functions.

OR

- a) Draw a labelled diagram of human ear.
- b) What is the role of eustachian tube in human ear.
- 27. Explain the mechanism of urine formation in human being.

OR

- a) Give a brief account of the counter current mechanism.
- b) What is uremia? Name the technique used for the treatment of this ailment.