

Sample Paper (A)

Class 12 Biology

General instructions

All questions are compulsory

The question paper has five sections and 35 questions .

All questions are compulsory

Section A has 18 questions of one mark each

Section B has 7 questions of 2 marks each

Section C has 5 questions of 3 marks each

Section D has two case study based questions of 4 marks

Section E has three questions of 5 marks each

There is no over all choice however internal choice have been provided in some questions student has to attempt only one of the alternative questions

Wherever necessary draw properly labelled diagrams

Section A

1. The coconut water from tender coconut is

- a) Cellular endosperm b) Free nuclear endosperm
c) Both cellular and nuclear endosperm d) Free nuclear embryo

2. Apomictic embryos in citrus arise from

- a) Diploid egg b) Synergids
c) Nucellus d) Antipodal cells

3. A pregnant women is having prolonged labour pains and childbirth has to fastened it is advisable to administer a hormone that can

- a) increase the metabolic rate b) release glucose in blood
c) stimulates the ovary d) activate smooth muscles

4. A procedure that finds use in testing for genetic disorders but is also misused for female foeticide is:

- a) Lactational amenorrhea b) Amniocentesis
- c) Artificial insemination d) Parturition
5. In human beings where genotype AABBCC represents dark skin colour, aabbcc represents light skin colour and AaBbCc represents intermediate skin colour the pattern of genetic inheritance can be termed as
- a) Pleiotropy and codominance b) Pleiotropy and incomplete
- c) Polygenic and qualitative inheritance d) Polygenic and quantitative inheritance
6. Chromosomal theory of inheritance was proposed by :
- a) Watson and Crick b) Sutton and Boveri
- c) Bateson and Punnett d) T.H Morgan
7. All of the following are part of an operon except :
- a) Structural genes b) An enhancer
- c) An operator d) A promoter
8. The equivalent of structural gene is :
- a) Operon b) Recon
- c) Muton d) Cistron
9. Evolution of life shows that life forms had a trend of moving from
- a) land to water b) dryland to wetland
- c) freshwater to sea water d) Water to land
10. Palaeontological evidences for evolution refer to the
- a) Development of embryo b) Homologous organs
- c) Fossils d) Analogous organs
11. Which of the following would appear as the pioneer organisms on bare rock?
- a) Green algae b) Lichens
- c) Liverworts d) Mosses
12. Which one of the following is not a method of in situ conservation of biodiversity?
- a) Biosphere Reserve b) Wildlife Sanctuary
- c) Botanical Garden d) Sacred Grove

13. The maximum growth rate occurs in:

- a) Stationary phase
- b) Senescent phase
- c) Lag phase
- d) Exponential phase

14. Organisms capable of maintaining constant body temperature are:

- a) Stenothermal
- b) Homeothermal
- c) Poikilothermal
- d) Conformers

Assertion-Reason type questions:

These question consists of two statements each printed as Assertion and Reason. While answering these questions you are required to choose any one of the following responses.

- A. If both Assertion and Reason are true, Reason is correct explanation of the Assertion.
- B. If both Assertion and Reason are true but Reason is not correct explanation of the Assertion.
- C. If Assertion is true but Reason is false.
- D. If both Assertion and Reason are false

15. Assertion: DNA fingerprinting involves identifying differences in some specific regions DNA sequence.

Reason: In repetitive DNA sequences a small stretch of DNA is repeated many times .

- A
- B
- C
- D

16. Assertion: Genetic engineering is essentially the alteration of the genetic make up of cells by deliberate and artificial means .

Reason: It involves transfer or replacement of genes to create recombinant DNA .

- A
- B
- C
- D

17. Assertion: BOD indicates the extent of water pollution by organic wastes

Reason: Increase in BOD decreases dissolved oxygen of waste water.

- A
- B
- C
- D

18. Assertion: Round worm is endoparasite of human intestine

Reason: Improperly cooked food is the source of intestinal infections .

- A
- B
- C
- D

Section B

19. Differentiate between benign tumour and malignant tumour (four differences in tabulated form).

OR

Differentiate between active and passive immunity (four differences in tabulated form).

20. Name the enzyme produced by streptococcus bacterium. Explain its importance in medical sciences
21. Name a free living and a symbiotic bacterium that serve as bio fertilizer. Why are they so called?
22. Write four advantages of GMO.
23. Write scientific name of fruit fly. Why did Morgan prefer to work with fruit flies for his experiment. Give two reason.

OR

Differentiate between Genotype and Phenotype.

24. What is DNA polymorphism? Why is it important to study it?
25. How do Darwin's finches illustrate adaptive radiation?

Section C

26. Mention the ploidy of the different types of cells present in female gametophyte of an organism.

OR

Describe the structure of microsporangium.

27. A Woman with blood group O married a man with AB group. Show the possible blood groups of progeny list the alleles involved in this inheritance.

OR

Explain Mendel's law of segregation in a typical monohybrid cross with the help of suitable example

28. What is PCR. Explain its steps.
29. Describe flow of energy in an ecosystem.
30. Write any three causes of Biodiversity loss.

Section D

31. Read the following and answer any four question from 10(i) and 10(v) given below:

A woman unable to conceive after many years of regular unprotected coitus went to specialised Infertility clinic. On complete examination woman has found to be normal while male partner was Diagnosed with infertility. Male partner his unable to copulate the female . Couple was advised to opt for assisted reproductive technology (ART).

- 1) Name the technique which can be beneficial for the couple
- 2) What is meant by unprotected coitus

3) What is the use IVF for the couple

OR

What is the cause of infertility in male in above case

32. A group of teenagers was involved in drug abuse . They used syringes and needles to inject drugs They indulged in this habit when they became adults. Administration of drugs through needles Became a piece of cake for them. Raj was the most active drug abuser amongst them and use to Take drugs in high profile parties. In a span of time he started losing weight and suffered Persistent Diarrhoea. He developed constant low grade fever and used to catch opportunistic infection . When He consulted a doctor he got himself tested for HIV in his blood and finally diagnosed with AIDS.

Based on the above information answer the following question.

- 1) What is the cause of Raj's weight loss ?
- 2) Is HIV a virus or bacteria
- 3) Write the cause of AIDS

OR

Write the symptoms of AIDS

Section E

33. Expand the name of enzyme ADA. Why is this enzyme essential in human body? Suggest a gene therapy for its deficiency.

OR

How is BT cotton plant produced? Explain the mechanism by which the plant is able to resist theinfestation by cotton bollworms.

34. Explain Hershey-Chase experiment. What was proved through this experiment.

OR

Describe Griffith's experiment on streptococcus pneumoniae. Discuss the conclusion he arrived at.

35. What is menstrual cycle? Explain the various phases of menstrual cycle.

OR

Describe various events in human embryonic development at various months pregnancy.

