

QUESTION PAPER (TERM - I) (2022-23)

CLASS - +2

SUBJECT - BIOLOGY

Time : 3 hours

M.M. : 50

- Candidates are required to give their answers in their own words as far as possible.
- Marks allotted to each question are indicated against it.

Special Instructions :

- While answering your questions, you must indicate on your answer book. The same question no, as it appears on your question paper.
- Do not leave blank page/pages in your answer book.
- All questions are compulsory. Internal choice in given in same questions.
- There are two sections in question paper : Section-A and Section B.
- Section A consists of 20 questions of 1 mark each MCQ, Assertion and Reason, Match the column type.
- Section B consists of 11 questions i.e. Q. No. 21 to Q.No. 31

- Question nos. 21 to 27 are of 2 marks each. Answer each of them in 30–40 words.
- Question nos. 28 to 29 are of 3 marks each. Answer each of them in 80–90 words.
- Question nos. 30 to 31 are of 5 marks each. Answer each of them in 150–180 words.
- Draw neat and well labelled diagrams wherever necessary.

Section-A

- Cyclical changes in the activities of ovaries, accessory ducts as well as hormones during reproductive phase in non-primate mammals is called.
 - Menstrual cycle
 - Reproductive cycle
 - Oestrus cycle
 - Vegetative cycle
- Innermost layer of microsporangium is called.
 - Epidermis
 - Tapetum
 - Endothecium
 - Middle layers
- Pollen grains are well preserved as fossils because of the presence of.
 - Sporoxanthin
 - Glucoproteins
 - Lipoportins
 - Sporopollenin

4. The flowers which don't open at all to ensure self pollination are called.
 - (a) Cleistogamous flowers
 - (b) Chasmogamous flowers
 - (c) Autogamous flowers
 - (d) Homogamous flowers
5. Choose the mismatched option.
 - (a) Wind-Cannabis : ~~Anemophily~~
 - (b) Water-Zoostera : Hydrophily
 - (c) Insects-Salvia : Entomophily
 - (d) Birds-Adansonia : Ornithophily
6. Sertoli cells are regulated by pituitary hormones known as.
 - (a) LH
 - (b) FSH
 - (c) GH
 - (d) Prolactin
7. The embryo at 16 celled stage is known as.
 - (a) Morula
 - (b) Gastrula
 - (c) Blastula
 - (d) Blastomere
8. Which among the following has 23 chromosomes
 - (a) Spermatogonia
 - (b) Zygote
 - (c) Secondary oocyte
 - (d) Oogonia
9. Amniocentesis is a process to.
 - (a) determine any diseases of the heart
 - (b) determine any hereditary diseases of the embryo
 - (c) know about diseases of the brain
 - (d) grow cell in culture medium
10. Which of the following is not a sexually transmitted disease.
 - (a) Gonorrhoea
 - (b) Syphilis
 - (c) Diarrhoea
 - (d) AIDS
11. Sickle cell anaemia is.
 - (a) Caused by substitution of valine by glutamic acid in the beta globin chain of haemoglobin
 - (b) Caused by a change in single base pair of DNA
 - (c) Characterised by elongated sickle like RBCs with a nucleus
 - (d) An autosomal linked dominant trait
12. When a single gene exhibits more than one phenotypic effects then this phenomenon is called.
 - (a) Multiple allelism
 - (b) Mosaicism
 - (c) Pleiotropy
 - (d) Polygeny

13. Which of the following is sex determination method in Grasshopper?
- (a) XX-XY (b) XX-XO
(c) ZW-ZZ (d) ZO-ZZ
14. The mutations, which alter the entire reading frame of the message, are called.
- (a) Dystrophy
(b) Nonsense mutations
(c) Mis-sense mutations
(d) Frame shift mutations
15. Which of the following is not a terminator codon?
- (a) UAA (b) UAG
(c) AUG (d) UGA
16. In eukaryotes, the negatively charged DNA is wrapped around the positively charged histone octamer to form a structure called.
- (a) Chromation (b) Nucleosome
(c) Euchromation (d) Heterochromation
17. A strong experimental evidence which supported the semiconservative mode of DNA replication was given by.
- (a) Watson and crick
(b) Meselson and stahl
(c) Taylor and crick
(d) Watson and stahl

Directions for Q. No. 18 and 19

The following questions consists of two statements:

Assertion (A) and Reason (R). To answer these questions, mark the correct alternative as directed below :

- (a) If both A and R are true and R is the correct explanation of A.
(b) If both A and R are true and R is the correct explanation of A.
- (c) If A is true but R is false
(d) If both A and R are false
18. Assertion: Adenine cannot pair the cytosone.
Reason : Adenine and cytosine do not have a perfect match between hydrogen donor and hydrogen acceptor sites.
- (a) a (b) b
(c) c (d) d
19. Assertion: The earth originally had a reducing atmosphere
Reason : There was no life on the earth when it came into existence
- (a) a (b) b
(c) c (d) d

20. Pusa swarnim is the hybrid variety of which of the following crops.

- (a) Wheat
- (b) Brassica
- (c) Cauliflower
- (d) Cowpea

Section-B

21. How does the progeny formed from asexual reproduction differ from those formed by sexual reproduction? 2

22. Draw well labelled diagram of a mature sperm. 2

23. Define and design a test cross. 2

24. What is lactational amenorrhoea? 2

Or

How do the oral pills help in birth control? Name two common pills used. 2

25. Describe adaptive radiation with the help of one example. 2

26. Differentiate between homologous and analogous organs. 2

Or

Explain why microbes have become resistance to antibiotics. 2

27. What is bio fortification? Give one example. 2

28. Give diagrammatic presentation of stages in oogenesis. 3

Or

(a) What is implantation?

(b) What is placenta? Write its main two functions. 1+2

29. (a) What is Down's syndrome? Give its symptoms and cause.

(b) Name of the organisms on which T.H. Morgan worked to give the concept of Linkage. $1\frac{1}{2}+1\frac{1}{2}$

30. (a) Explain the process of development of male gametophyte.

(b) Draw a well labelled diagram of an embryo sac. 4+1

31. Differentiate between the following : $1\frac{1}{2}+2+1\frac{1}{2}$

(a) mRNA and tRNA

(b) Prokaryotic DNA and Eukaryotic DNA.

(c) Template and coding strand.

Or

(a) Name the largest known human gene.

(b) Describe briefly the process of translation. 1+4