

Roll No....

Total No. of Questions-30] [Total No. of Printed Pages-11

A-856-A-XII-2324

**BIOLOGY****(Theory)**

Time Allowed-3 Hours Maximum Marks-60

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

Marks allotted to each question are indicated against it.

**Special Instructions :**

- (i) You must write Question Paper Series in the circle at top left side of title page of your Answer-book.

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- (ii) While answering your Questions, you must indicate on your Answer-book the same Question No. as appears in your Question Paper.
- (iii) Do not leave blank page/pages in your Answer-book.
- (iv) All questions are compulsory and divided into four sections.
- (v) Internal choices are given in some questions.
- (vi) Answers should be brief and to the point.
- (vii) Section-A contains 12 questions of 1 mark each (MCQ, Assertion and Reason, Match the column type).
- (viii) Section-B Question Nos. 13 to 22 are of 2 marks each.
- (ix) Section-C Question Nos. 23 to 28 are of 3 marks each.

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(x) Section-D Question Nos. 29 and 30 are of 5 marks each.

(xi) Draw neat, clean and well labelled diagram wherever required.

### SECTION-A

1. Offsets are Produced by : 1

- (a) Parthenocarpy (b) Meiotic division  
(c) Partham genesis (d) Mitotic division.

2. Beginning of first Menstruation is called : 1

- (a) Menarche (b) Capacitation  
(c) Menopause (d) None of these.

3. The Father of experimental genetics is : 1

- (a) G.J. Mendel (b) Sir Archibald  
(c) Bateson (d) T.H. Morgan.

4. The possible Genotypes of Blood Group 'A' in Heterozygous condition : 1

- (a)  $I^A i$  (b)  $I^A I^B$   
(c)  $I^A I^A$  (d) ii.

5. Origin of life was written by : 1

- (a) S.L. Miller (b) A.I. Oparin  
(c) De Vries (d) Charles Darwin.

6. The Gas present in the early reducing atmosphere was : 1

- (a)  $O_2$  (b)  $N_2$   
(c) Both (a) & (b) (d) None of these.

7. Confirmatory test for Typhoid is : 1

- (a) ELISA (b) Western Blot  
(c) Widal Test (d) All the above.

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8. Heroin and Opiates are obtained from : 1

- (a) Thea (b) Papaver  
(c) Cannabis (d) Theobroma.

9. Foetal abnormality caused by : 1

- (a) Nicotine (b) Alcohol  
(c) LSD (d) Opium.

10. Ozone layer in upper atmosphere is destroyed by : 1

- (a) CFCs (b) SO<sub>2</sub>  
(c) O<sub>2</sub> and CO<sub>2</sub> (d) Smog.

11. Prevention and Control of Air pollution was amended in : 1

- (a) 1972 (b) 1949  
(c) 1981 (d) 1987.

12. Mycorrhizal are an example of : 1

- (a) Mutualism  
(b) Fungistasis  
(c) Amensalism  
(d) Antibiosis.

### SECTION-B

13. (a) What is Tapetum?

(b) Give its functions. 2

14. What are the Analogous organs? Give an example. 2

15. When a cross is made between Tall plant with yellow seed TtYy and Tall plant with green seed Ttyy. What proportion of phenotype offspring expected? 2

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16. (a) What is the Biogas? 2  
(b) Give its composition.

17. Differentiate between Innate Immunity and Acquired Immunity.

Or

18. Differentiate between Active Immunity and Passive Immunity. 2

18. How Bt-cotton plant produced? Explain it. 2

19. Why has the Indian Government set up organisation named as GEAC? 2

20. Differentiate between Predator and Parasite. 2

21. Define the Bioenergetics and 10% law. 2

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22. Match the following columns : 2

Column-I	Column-II
(A) Allen's rule	(1) Kangaroo rats
(B) Physiological adaptation	(2) Desert Lizards
(C) Behavioural adaptation	(3) Marine fish at depth
(D) Biochemical adaptation	(4) Polar seal

Codes:

(A)	(B)	(C)	(D)
(a) (4)	(3)	(2)	(1)
(b) (4)	(2)	(3)	(1)
(c) (4)	(1)	(3)	(2)
(d) (4)	(1)	(2)	(3)

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**SECTION-C**

23. Draw a well labelled diagram of T.S. of Human Testis. 3
24. Why mendel selected pea plant for his breeding experiments? 3

**Or**

- Enlist seven characters of pea plant studied by Mendel. <https://www.hpboardonline.com> 3
25. Industrial Melanism is an example of Natural selection. Explain it. 3
26. Name the causative agent of Malaria. Give any two symptoms of Malaria. 3
27. Name and explain Technique used in the separation and isolation of fragments used in DNA recombination technology. 3

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28. Define the Pioneer community, Transitional community and Climax community. 3

**Or**

- What are Trophic levels? Explain diagrammatically the Pyramid of Energy. 3

**SECTION-D**

29. (a) Briefly describe the process of development of male gametophyte in Angiosperm. 3
- (b) Write a short note on MTP. 2
30. (a) What are Cry proteins? Name the organism from where it is obtained. 2
- (b) What is Genetically Engineered Insulin? How it is obtained ? Explain. 3

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**Or**

(a) Write a note on down stream processing. 2

(b) Draw a well labelled diagram of Bioreactor. 3

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