



TECHNO INDIA GROUP PUBLIC SCHOOL

MOCK TEST-2 (2025-2026)

CLASS-XII

Subject Code **044**

Roll No.

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Candidates must write the code on the title page of the answer-book.

BIOLOGY

Time allowed : 3 hours Maximum Marks : 70

General Instruction:

- (i) All questions are compulsory.
- (ii) The question paper has five sections and 33 questions.
- (iii) Section-A has 16 questions of 1 mark each; Section-B has 5 questions of 2 marks each; Section-C has 7 questions of 3 marks each; Section-D has 2 case-based questions of 4 marks each; and Section-E has 3 questions of 5 marks each.
- (iv) There is no overall choice. Answer all 33 questions. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.
- (v) Wherever necessary, neat and properly labeled diagrams should be drawn.

SECTION A

Q. no. 1 to 12 are multiple choice questions. Only one of the choices is correct. Select and write the correct choice as well as the answer to these questions.

1.	Autogamy can occur in a chasmogamous flower if (A) pollen matures before maturity of ovule (B) ovules mature before maturity of pollen (C) both pollen and ovules mature simultaneously (D) both anther and stigma are of equal lengths	[1]
2.	The signals of parturition originate from (A) placenta (B) fully developed foetus (C) oxytocin released from pituitary (D) both placenta and fully developed foetus	[1]
3.	The method of directly injecting a sperm into ovum in ART is (A) GIFT (B) ZIFT (C) ICSI (D) ET	[1]
4.	Occasionally, a single gene may express more than one effect. The phenomenon is called (A) multiple allelism (B) mosaicism (C) pleiotropy (D) polygeny	[1]

5.	A human female with Turner's syndrome has (A) karyotype 45 + XO (B) an additional X chromosome (C) trisomy of X chromosome (D) male characteristics	[1]
6.	According to Hugo de Vries, speciation is due to (A) accumulation of small variations (B) saltation (C) interspecific breeding (D) intraspecific breeding	[1]
7.	Which of the following is not the causal organism for ringworm? (A) <i>Microsporium</i> (B) <i>Trichophyton</i> (C) <i>Epidermophyton</i> (D) <i>Macrosporium</i>	[1]
8.	The technology of biogas production from cow dung was developed in India largely due to the efforts of (A) Gas Authority of India (B) ONGC (C) Indian Oil Corporation (D) Indian Agricultural Research Institute and Khadi & Village Industries Commission	[1]
9.	Which of the given statements is correct in the context of observing DNA separated by agarose gel electrophoresis? (A) DNA can be seen in visible light (B) DNA can be seen without staining in visible light (C) Ethidium bromide stained DNA can be seen in visible light (D) Ethidium bromide stained DNA can be seen under exposure to UV light	[1]
10.	A bioreactor refers to (A) fermentation tank (B) tank for biochemical reactions (C) organisms reacting to a stimulus (D) tank for biochemical waste	[1]
11.	Autecology is the (A) relation of an individual to its environment (B) relation of a biome to its environment (C) relation of a community to its environment (D) relation of a population to its environment	[1]
12.	Biochemical Oxygen Demand in river water (A) has no relationship with concentration of oxygen in the water (B) gives a measure of <i>Salmonella</i> in the water (C) increases when sewage gets mixed with river water (D) remains unchanged when algal bloom occurs	[1]

Question No. 13 to 16 consist of two statements—Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below :

Assertion and Reason :

Directions: The following two questions consist of two statements - Assertion and Reason (R). Answer these questions by selecting the appropriate option given below :

A : Both A and R are true and R is the correct explanation of A.

B : Both A and R are true but R is not the correct explanation of A.

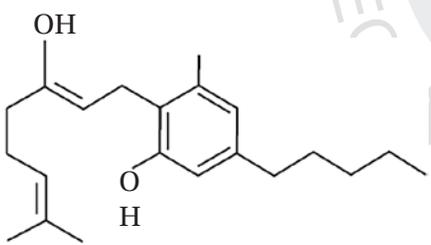
C : A is true but R is false

D : A is false but R is true.

13.	Assertion (A): In a terrestrial ecosystem, detritus food chain is the major conduit for energy flow. Reason (R): Solar energy is the direct source for energy supply in a detritus food chain (A) A (B) B (C) C (D) D	[1]
14.	Assertion (A): Predators are organisms which feed an other individuals. Reason (R): Prey species have evolved various defenses to lessen the impact of predation. (A) A (B) B (C) C (D) D	[1]
15.	Assertion (A): Patents are granted by government to an inventor. Reason (R): Patents prevent others from commercial use of an invention. (A) A (B) B (C) C (D) D	[1]
16.	Assertion (A): In plants, apomixis is a type of asexual reproduction that mimics sexual reproduction. Reason (R): In apomixis, seeds are produced without the fusion of gametes. (A) A (B) B (C) C (D) D	[1]

SECTION B

Section B consists of 5 questions of 2 marks each

17.	<i>Attempt either option A or B:</i> (A) Why does the zygote begin to divide only after the division of the primary endosperm cell? OR (B) Which is the triploid tissue in a fertilised ovule? How is the triploid condition achieved?	[2]									
18.	Mention two functions of the codon AUG?	[2]									
19.	Study the given figure and answer the following questions:  A. Name the group of drugs the given molecule represents. B. How are such drugs consumed?	[2]									
20.	<i>Attempt either option A or B:</i> (A) Explain how does a restriction nuclease function. OR (B) Would you like to choose an exonuclease enzyme while producing a recombinant DNA molecule? Explain.	[2]									
21.	<i>Attempt either option A or B:</i> (A) Given below is a table depicting population interactions between Species A and Species B. <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Type of interaction</th> <th>Specis A</th> <th>Specis B</th> </tr> </thead> <tbody> <tr> <td>(a)</td> <td>(-)</td> <td>(+)</td> </tr> <tr> <td>(b)</td> <td>(+)</td> <td>(-)</td> </tr> </tbody> </table> (i) Name the two types of population interactions (a) and (b) depicted in the given table. (ii) Explain why interaction (b) is important in an ecological content.	Type of interaction	Specis A	Specis B	(a)	(-)	(+)	(b)	(+)	(-)	[2]
Type of interaction	Specis A	Specis B									
(a)	(-)	(+)									
(b)	(+)	(-)									

OR

- (B) (i) In a pond, there are 200 frogs. 40 more were born in the year. Calculate the birth rate of the population.
 (ii) Population, in the terms of number, is not always a necessary parameter to measure population density. Justify with an example.

SECTION C

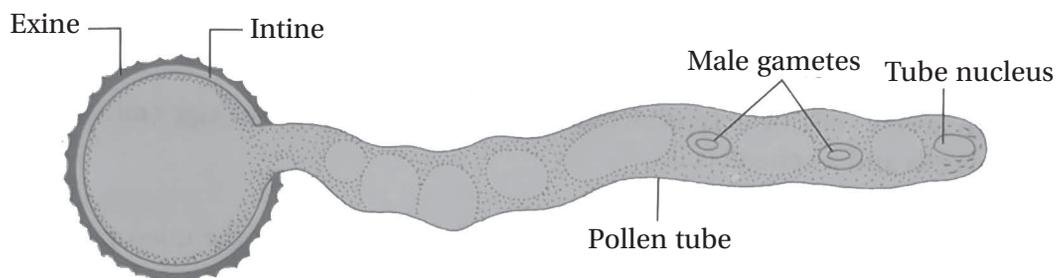
Section C consists of 7 questions of 3 marks each

22.	(i) List any two characteristics of an ideal contraceptive. (ii) Name two intrauterine contraceptive devices that affect the motility of sperms.	[3]
23.	Draw a labelled diagram of a human blastocyst. How does it get implanted in the uterus?	[3]
24.	A couple with normal vision bear a colour blind child. Work out a cross to show how it possible and mention the sex of the affected child.	[3]
25.	How does industrial melanism support Darwin's theory of Natural Selection? Explain.	[3]
26.	Describe how 'flocs' and 'activated sludge' help in sewage treatment.	[3]
27.	How is PCR used to detect gene mutation in case of suspected cancer patient?	[3]
28.	What would happen to the successive trophic levels in the pyramid of energy if the rate of reproduction of phytoplanktons slowed down? Suggest two factors which could cause such a reduction in phytoplankton reproduction.	[3]

SECTION D

Section D consists of 2 questions of 4 marks each

29. Observe the diagram of pollen grain given below. Answer the questions that follow:



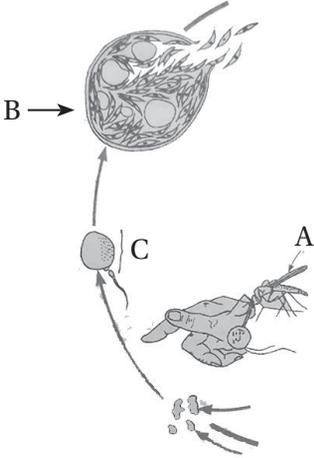
- A. How many pollen grains and ovules are likely to be formed in the anther and the ovary of an angiosperm bearing 25 microspore mother cells and 25 megaspore mother cells, respectively?
 B. If the stamens are well exposed, which type of pollination is usually followed by the plant?

Attempt either subpart C or D:

- C. Where is sporopollenin found in the pollen grain? What is its function?

OR

- D. Where are germ pores present in a pollen grain? What is the function of a germ pore?

30.	<p>Study a part of the life cycle of malarial parasite given below:</p>  <p>A. Name the event 'C' and the organ where this event occurs. B. Identify the organ 'B' and name the cells being released from it. <i>Attempt either subpart C or D:</i> C. What is 'A'? Mention the role of 'A' in the life cycle of the malarial parasite. D. Explain the reason for the periodic recurrence of chill and high fever during malarial attack in humans.</p>	[4]
<p>SECTION E</p> <p>Section E consists of 3 case questions of 5 marks each</p>		
31.	<p>(i) List the criteria , a molecule must fulfill to act as a genetic material. (ii) Which one of the criteria are best fulfilled by DNA or RNA thus making one of them a better genetic material than the other? Explain.</p>	[5]
32.	<p>(i) Describe the characteristics that a cloning vector must possess. (ii) Why can DNA not pass through the cell membrane? Explain. (iii) How is a bacterial cell made 'competent' to take up recombinant DNA from the medium?</p> <p style="text-align: center;">OR</p> <p>If a desired gene is identified in an organism for some experiments, explain the process of the following: (i) Cutting these desired gene at specific location. (ii) Synthesis of multiple copies of this desired gene.</p>	[5]
33.	<p>A. (i) Why is there a need to conserve biodiversity? Give two reasons. (ii) Name and explain any two causes that are responsible for the loss of biodiversity.</p> <p style="text-align: center;">OR</p> <p>B. (i) Name the two types of desirable approaches to conserve biodiversity. Explain with examples, bringing out the differences between the two types. (ii) State the features of a stable biological community.</p>	[5]