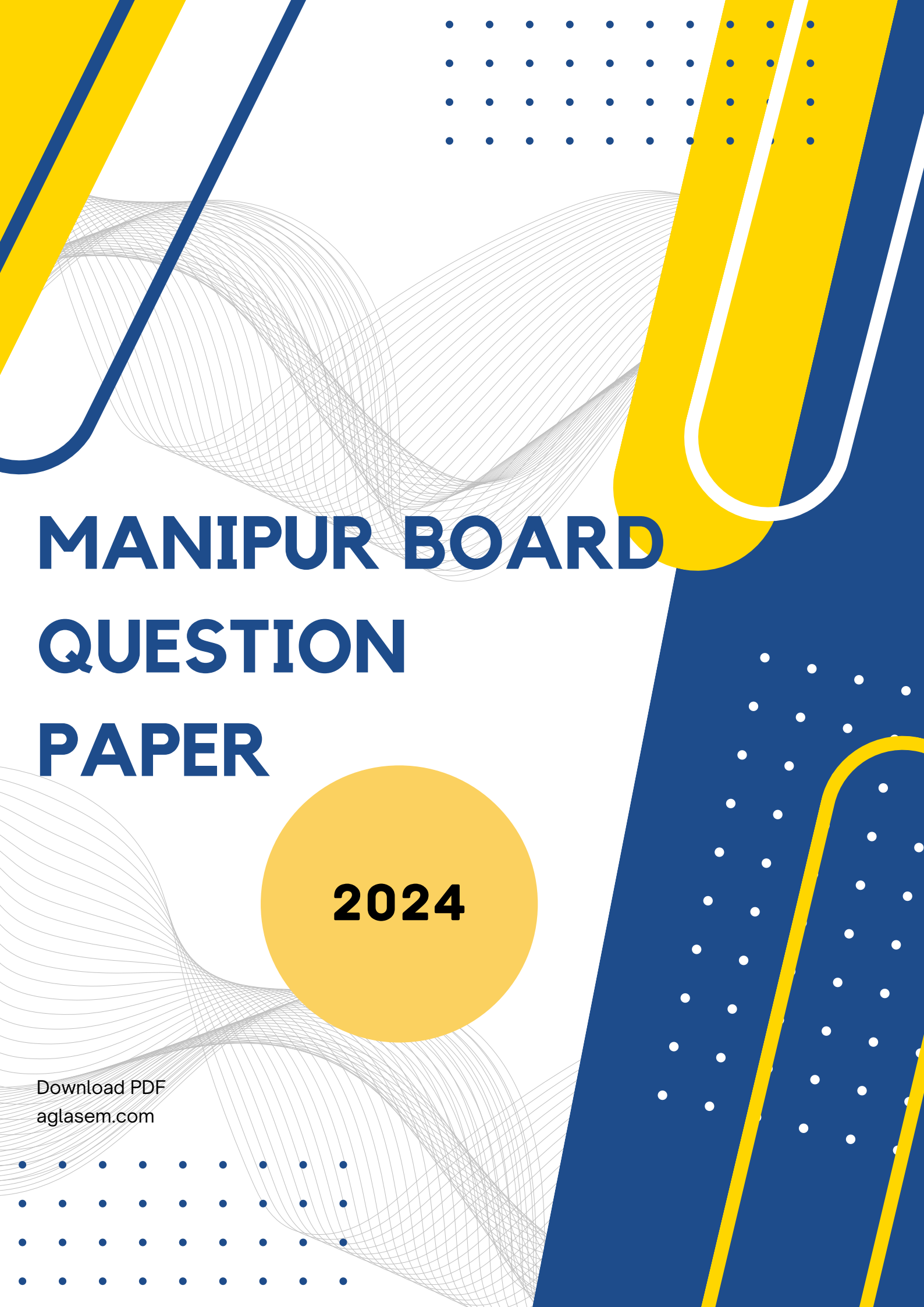




MANIPUR BOARD QUESTION PAPER

2024

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2 Blo (T) 18/24

2024
BIOLOGY
(Theory)

Full Marks : 70

Pass Marks : 21

Time : Three hours

All the questions are compulsory.

The figures in the right margin indicate full marks for the questions.

For Question Nos. 1 to 7, select most appropriate one from the given alternatives A, B, C and D and rewrite the same.

1. Entry of pollen tube through micropyle is called – 1
 - A. Mesogamy
 - B. Pseudogamy
 - C. Chalazogamy
 - D. Porogamy
2. During protein synthesis, peptide bonds are formed at the – 1
 - A. Nucleus
 - B. Nucleolus
 - C. Ribosomes
 - D. Lysosomes



P.T.O.

3. Which of the following Nonsense codon is called "ochre"?
- A. AUG
 - B. UAG
 - C. UAA
 - D. UGA
4. Short lived immunity acquired from mother across placenta is categorized as –
- A. Active immunity
 - B. Passive immunity
 - C. Innate non-specific immunity
 - D. Cellular immunity
5. DNA or RNA segment tagged with radioactive molecule is called –
- A. Probe
 - B. Vector
 - C. Clone
 - D. Plasmid
6. Which among the following is the first discovered of Restriction Endonuclease?
- A. Eco RI
 - B. Eco RII
 - C. Hind I
 - D. Hind II

7. Identify from the following ecologists who stated that increased diversity contributed to higher productivity – 1

- A. Paul Ehrlich
- B. David Tilman
- C. Robert May
- D. Georgy Gause

Question Nos.8 to 17 are very short type questions carrying 1 mark each.

8. Name one disorder that can be detected by amniocentesis. 1

9. Distinguish between true fruits and false fruits by giving one point. 1

10. State the utility of back cross. 1

11. Why is Y chromosome referred to as genetically inert? 1

12. Law of dominance is not universally applicable. Give reason. 1

13. Why is mortality of animals increase at sewage discharge points? 1

14. Why is colostrum very much essential for new born infants? 1

15. Virus infected cells provide innate immunity to other uninfected cells. Analyse. 1

16. During gel electrophoresis DNA fragments move towards the anode instead of the cathode. Give reason. 1



17. What is 'The Evil Quartet' in biodiversity losses? 1

Question Nos. 18 to 27 are short answer type-II questions carrying 2 marks each.

18. Name the parts of an angiosperm flower in which the development of male and female gametophyte takes place. 2
19. Differentiate between tubectomy and vasectomy by giving two points. 2
20. "Flowering plants have developed many devices to prevent self-pollination". Analyse with suitable reasons. 2
21. How does the study of comparative anatomy provide evidence in favour of evolution? Support your answer with two points. 2
22. Explain by giving two points the role of Integrated pest Management programme. 2
23. How does spleen act as lymphoid organ? Give two points. 2
24. Differentiate between sticky end and blunt end of DNA in two points. 2
25. Human insulin when initially synthesized in human body needs to be processed before it can act. Explain. 2
26. Why do we conserve wildlife? Give two points. 2
27. "There are certain limitations of ecological pyramids", Give reason. 2



Question Nos. 28 to 33 are short answer type-I questions carrying 3 marks each.

28. Explain aminoacylation of the tRNA. 3

OR

Why is RNA considered as the first genetic material? Explain. 3

29. A DNA segment has a total of 1000 nucleotides, out of which 240 of them are adenine containing nucleotides. How many pyrimidine bases this DNA segment possesses ? 3

OR

If the gene frequency of a recessive allele t is 0.2, find out the percentage of individuals with genotype TT , Tt and tt in the population. 3

30. Differentiate between Benign tumour and Malignant tumour by giving three points. 3

OR

Elucidate the process of replication of a retrovirus after it gains entry into human body. 3

31. "Prevention is better than cure". Justify with regard to drug abuse among youth in three points. 3

OR



"Determination of BOD can help in suggesting the quality of water body". Justify.

3

32. Although biotechnology promotes human welfare, it can also be misused to increase human suffering. Comment on the statement by giving three points. 3

OR

Genetically Modified plants have been useful in many ways. Give suitable reasons.

3

33. Draw a neat diagram of declining age pyramid and label the pre-reproductive and reproductive age group. 3

OR

Draw a neat diagram of inverted pyramid of biomass of aquatic ecosystem and label primary producer and secondary consumer. 3

Question Nos. 34 to 36 are Essay type questions carrying 5 marks each.

34. Enumerate five adaptive floral characteristics of insect pollinated flowers. 5

OR

Trace the various phases of menstrual cycle emphasizing the role of hormones in human female. 5

35. Demonstrate in five points the goals of Human Genome project. 5

OR

"DNA polymorphism is the basis of DNA fingerprinting technique". Analyse.

5

36. Why is India considered as a mega biodiversity hotspot? Explain the biodiversity hotspots of India with their location. 5

OR

Explain with illustrations the different population interactions and give examples.

5



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