MAHARASHTRA BOARD · CLASS 12 · BIOLOGY

Maharashtra Board Class 12 Biology Guess Paper 2027

Time: 3 hours · Maximum marks: 70 · 37 questions

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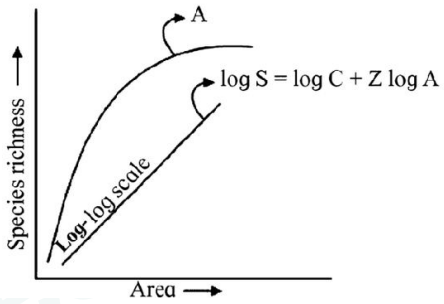
Section A

Q1 ten MCQs (1 mark each) and Q2 eight very short answer questions (1 mark each)

Q1. When food is translocated from phloem to pith, it is called _____ translocation. (a) radial (b) tangential (c) upward (d) downward — 1 mark

Q2. Identify 'A' from the graph given below showing species area relationship : [species-area relationship graph] — 1 mark

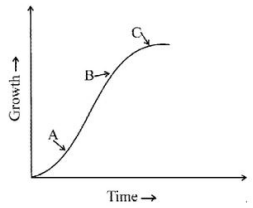
(v) Identify 'A' from the graph given below showing species area relationship :



Q3. Rivet Popper Hypothesis explains (a) loss of biodiversity (b) biomagnification (c) species area relationship (d) significance of diversity — 1 mark

Q4. [figure of population growth curve] Choose the correct name of phases A, B and C in the given figure : (a) Stationary, Log, Lag (b) Log, Lag, Stationary (c) Log, Stationary, Lag (d) Lag, Log, Stationary — 1 mark

given figure :



Q5. The microorganism used for production of beverages like wine, whisky, etc. is _____. (a) Streptomyces venezuelae (b) Saccharomyces cerevisiae (c) Aspergillus niger (d) Streptomyces griseus — 1 mark

Q6. Which of the following is NOT a Day Neutral Plant (DNP)? (a) Cucumber (b) Tomato (c) Cotton (d) Tobacco — 1 mark

Q7. Flavr savr tomato is genetically modified variety for improving _____. (a) shelf life (b) disease resistance (c) iron content (d) yield — 1 mark

Q8. A petridish containing nutrient medium shows tremendous increase in number of bacteria in short time. It is _____ growth. (a) slow (b) exponential (c) logistic (d) linear — 1 mark

Q9. Weight loss, increased BMR and protruding eyeballs are the characteristics of _____. (a) Cretinism (b) Exopthalmic goitre (c) Myxodema (d) Simple goitre — 1 mark

Q10. Charas and ganja are different products obtained from _____. (a) Papaver somniferum (b) Erythroxylum coca (c) Atropa belladonna (d) Cannabis sativa — 1 mark

Q11. Name the causative agent of typhoid. — 1 mark

Q12. How many meiotic divisions are required to produce 80 male gametes in Angiosperms? — 1 mark

Q13. Name the process in which swelling of hydrophilic colloids occur due to adsorption of water. — 1 mark

Q14. What are Long Day Plants (LDP)? — 1 mark

Q15. Which part of human brain is responsible for maintaining body balance? — 1 mark

Q16. What is the approximate volume of blood pumped out during one cardiac cycle in adult human? — 1 mark

Q17. Name the milk secreted by mammary gland soon after parturition. — 1 mark

Q18. Give the function of Leydig's cells. — 1 mark

Section B

Short answer questions, 2 marks each (attempt any 8 of 12)

Q19. Differentiate between Inspiration and Expiration with respect to position of diaphragm and working of intercostal muscles. — 2 marks

Q20. Complete the chart showing human proteins produced by DNA technology to treat human diseases and re-write. Disorders/diseases | Recombinant Proteins: ? | Erythropoietin; Asthma | ?; ? | Tissue plasminogen activator; Emphysema | ? — 2 marks

Q21. Draw a neat diagram of structure of root hair showing vacuole, mitochondria and nucleus. — 2 marks

Q22. Give the skeletal features of Homo erectus. — 2 marks

Q23. Sketch and label the Graafian follicle showing theca externa, antrum and corona radiata. — 2 marks

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Q24. Identify A, B, C and D from the following table regarding respiratory system : Organism/Habitat/Respiratory organ - A(Terrestrial, Tracheal tubes and spiracles), Scorpions(Terrestrial, B), Sponges(C, Plasma membrane), Turtles(Underwater, D). 2 marks

Q25. Arrange the following steps of DNA fingerprinting in correct sequence : (a) Gel electrophoresis (b) Isolation of DNA (c) Southern blotting (d) Restriction digestion 2 marks

Q26. Mention any four factors affecting water absorption. 2 marks

Section C
Short answer questions, 3 marks each (attempt any 8 of 12)

Q27. Explain leaching, humification and mineralization as the steps of decomposition process. 3 marks

Q28. Write the name and position of any three valves in human heart. 3 marks

Q29. Define : (a) Siphonogamy (b) Parthenocarpy (c) Polyembryony 3 marks

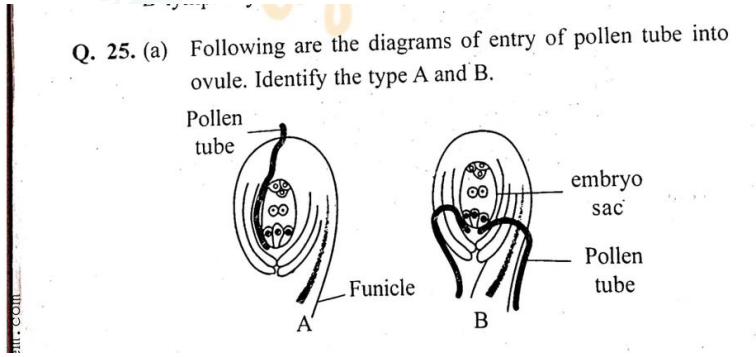
Q30. Write any three characters each of Archaeopteryx showing Reptilian and Avian features. 3 marks

Q31. (a) Give the composition of biogas. (b) Enlist the benefits of biogas. 3 marks

Q32. Mention any six symptoms of disorder caused by trisomy of 21st chromosome. 3 marks

Q33. Give the different steps involved in formation of m-RNA from hn-RNA. 3 marks

Q34. (a) Following are the diagrams of entry of pollen tube into ovule. Identify the type A and B. [diagrams of pollen tube entry into ovule] (b) Give any four points of significance of double fertilization. 3 marks



Section D
Long answer questions, 4 marks each (attempt any 3 of 5)

Q35. (a) Write a note on Holandric genes. (b) Complete the following table: A / B: (i) Monosomy - (1) ___ (ii) ___ - (2) 2n-2 (iii) Trisomy - (3) ___ (iv) ___ - (4) 2n+2 4 marks

Q36. Explain nuclear and helobial type of endosperm with suitable examples. 4 marks

Q37. With the help of labelled diagram describe the structure of human sperm. 4 marks

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