

2020
ZOOLOGY
[HONOURS]
Paper : VII

Full Marks : 50

Time : 2 Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer any **five** questions: 2×5=10
- a) Name two fossil hominids.
 - b) What are coproliths?
 - c) Give an example of founder effect.
 - d) What is r_f value?
 - e) What is numerical aperture of an objective?
 - f) State the main applications of a spectrophotometer.
 - g) What do you mean by genetic drift?
 - h) Distinguish between Batesian and Mullerian mimicry.

[Turn over]

2. Answer any **two** questions: 5×2=10
- a) What is chemical evolution? Describe the experiment of Urey and Miller in support of chemical evolution. 1+4
 - b) State the principle and uses of centrifugation as a biological tool. $2\frac{1}{2}+2\frac{1}{2}$
 - c) What are Zoogeographical Realms? State the climatic condition and significant fauna and floral composition of Oriental Realm. 2+1+2
3. Answer any **three** questions: 10×3=30
- a) Explain how desert fauna combat temperature stress while conserving body water. Explain convergent evolution with reference to anatomical and morphological characters of secondarily aquatically adapted animals. 4+6
 - b) Explain the principle and procedure of SDS-PAGE. Explain the uses of running and stacking gels and buffers. 2+4+2+2
 - c) How animal colours are produced? Differentiate between cryptic and warning colourations. With examples, describe different types of mimicry found in animal kingdom. 2+2+6

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d) One hundred persons from a small town in Bankura were tested for their MN blood types. The genotypic data are: MM= 41, MN= 38 and NN=21. Calculate the gene frequency of M and N. Is the population in Hardy-Weinberg Equilibrium? 10

e) Describe adaptive features of a whale in relation to aquatic life. What is Ampulla of Lorenzini? State its function.

7+2+1
