

2020

( Held in 2021 )

ZOOLOGY

( Major )

Paper : 5.4

Full Marks : 42

Time : 2 hours

*The figures in the margin indicate full marks  
for the questions*

GROUP—A

( Marks : 21 )

1. Answer the following questions  
(within 50 words each) : 1×2=2
  - (a) What is centrifugal force?
  - (b) What is sampling unit?
  
2. Give the answer of the following questions  
(within 100 words each) : 2×2=4
  - (a) What is the principle behind electrophoresis? Write the various applications of electrophoresis.
  - (b) What is machine language? What are the advantages and disadvantages of machine language?

3. Answer any *three* of the following questions (maximum word limit is 500 for each Question) : 5×3=15

- (a) What are the uses of mode? Mention the merits and demerits of mode.
- (b) What do you mean by cryopreservation? Write the cryopreservation process for preservation of egg.
- (c) What is biostatistics? Write briefly the different computer programmes used for biostatistical analysis.
- (d) Give a brief account of autoradiography with its principle.
- (e) Following are the 6 groups of planktons collected from three sampling stations of river Brahmaputra. Represent the data using bar diagram :

Planktons	Site—1	Site—2	Site—3
<i>Bacillariophyceae</i>	55	64	69
<i>Chlorophyceae</i>	105	98	78
<i>Cyanophyceae</i>	59	61	62
<i>Copepoda</i>	53	52	61
<i>Rotifers</i>	43	38	32
<i>Cladocera</i>	23	25	27

(Maximum words 250, diagram should be in one page)

( 3 )

GROUP—B

( Marks : 21 )

4. Answer any *three* of the following :  $7 \times 3 = 21$

- (a) In the electron microscope, electron beams are used instead of light. State the mechanism to create image in the electron microscope with the help of electron beam. (maximum limit of words is 750) 7
- (b) Which type of statistical test do you prefer to analyse the sample of three or more groups to determine the significant difference? State the reason for selection of this type of test. (maximum word limit for first part of question is 250 and for second part is 500)  $2+5=7$
- (c) In pH meter, potassium chloride is used inside the electrode. State the reason for use of potassium chloride. Can it be possible to use sodium chloride instead of potassium chloride? (maximum word limit for first part of question is 500 and for second part is 250)  $4+3=7$

- (d) "To determine the significance difference, paired  $t$ -test is applied for same sample and unpaired  $t$ -test is applied for different samples." Analyze the statement with suitable examples. Is it possible to apply  $t$ -test to analyze more than two groups? (maximum limit of words is 700) 5+2=7
- (e) Analyze the application of chromatographic principle in gas chromatographic process. (maximum limit of words is 700) 7

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