3 SEM TDC ZOO M 3 (N/O)

2 0 1 6

(November)

ZOOLOGY

(Major)

Course : 303

(Bioinstrumentation and Biostatistics)

Full Marks : 48

Pass Marks : 19 (Backlog) / 14 (2014 onwards)

Time : 2 hours

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

(New Course)

1. *(a)* Choose the correct one from the following options : 1×4=4

   (i) The term RPM is associated with

   (1) microscope

   (2) centrifuge

   (3) TLC

(ii) By which of the following microscopes, an unstained living cell can be observed?

(1) Compound microscope

(2) Electron microscope

(3) Phase contrast microscope

(iii) In any chromatographic technique

(1) a stationary phase usually a solid, thick liquid, or bonded coating that stays fixed in one place, and a mobile phase (usually a liquid or gas) moves through it or across it

(2) a stationary phase usually a (liquid or gas) moves through it or across it, and a mobile phase is solid, thick liquid or bonded coating that stays fixed in one place

(3) None of the above

(iv) Data that is collected by someone other than the user is

(1) primary data

(2) secondary data

(3) tertiary data

(b) Answer the following questions : 5×4=20

(i) What are the advantages and disadvantages of electron microscope?

(ii) Write on principle of centrifuge and discuss its application in biosciences.

(iii) Write a brief note on photometry used in biosciences.

(iv) When and how F-test of significance is used in biological science?

2. Distinguish between the following pairs : 4+4=8

(a) SEM and TEM

(b) Microtomy and Ultramicrotomy

Or

Write short notes on the following : 4+4=8

(a) Thin-layer chromatography

(b) Scanning electron microscope

3. What is kymograph? Mention its parts with diagram. Write the principle and practices of kymograph in bioscience. 1+3+4=8

Or

Why light microscope is referred to as optical microscope? Write about components, principle and uses of light microscope.

$1+2+3+2$

4. What is biostatistics? Write elaborately the applications of statistics in biosciences. $1+7$

Or

Write short notes on (any *two*) : 4×2

(a) Measures of central tendency

(b) Probability test

(c) Correlation