Total No. of Printed Pages—7

3 SEM TDC ZOO M 3 (N/O)

2018

(November)

ZOOLOGY

(Major)

Course : 303

(Bioinstrumentation and Biostatistics)

Time : 2 hours

The figures in the margin indicate full marks for the questions

(New Course)

Full Marks : 48
Pass Marks : 14

(Bioinstrumentation)

1. Rewrite the following sentences by keeping the appropriate word(s) from the given options : 1×3=3

(a) The resolution of scanning-electron microscope is about 10 nm / 20 nm / 25 nm / 30 nm.

(b) Near visible light / Visible light / Monochromatic light / Electromagnetic wave of invisible spectra is used in spectrophotometer.

(c) A beam of electrons is transmitted through an ultra-thin specimen in phase microscope / TEM /SEM / microtome.

2. Give an outline feature of ultracentrifugation and its application in bioscience. 3+4=7

3. Distinguish between any *two* of the following : 3×2=6

(a) Ion-exchange and thin-layer chromatography

(b) Magnification and resolution power of microscope

(c) Beer's law and Lambert's law

(Continued)

4. Write on the working principle and applications of any *two* of the following instruments : 6×2=12

(a) Rotary microtome

(b) Kymograph

(c) Scanning electron microscope (SEM)

(d) Colorimeter

(e) Spectrophotometer

(Biostatistics)

5. (a) Rewrite the following sentences by keeping the appropriate word(s) from the given options : 1×2=2

(i) If there is zero or negative value exist in a series of data, arithmetic mean / geometric mean / mean deviation / variance cannot be calculated.

(ii) Yates' correction is used in *t*-test / *Z*-test / *F*-test / χ^2-test.

(Turn Over)

(b) Distinguish between the following statistical terms (any *two*) : 3×2=6

(i) Discrete and Continuous data

(ii) Standard deviation and Standard error

(iii) Median and Mode

6. Elaborate why 'arithmetic mean' and 'standard deviation' are most widely used in analyzing biological data. 6

Or

Using probability theorem, calculate the probability of an event with a suitable example. 6

7. Write notes on any *two* of the following : 3×2=6

(a) Utility of biostatistics

(b) Confidence limits

(c) Regression equation

(d) Sampling