Total No. of Printed Pages—8

3 SEM TDC ZOO M 3 (N/O)

2017

(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. Fill in the blanks with suitable words : 1×3=3

(a) In paper chromatography, R_f value can be calculated from the distance travelled by the component and the _____ from the application point.

(b) ____ invented a microscope that allowed for the study of colourless and transparent biological materials without staining.

(c) One of the two kinds of lamps used as light source in spectrophotometer is ____ lamp for measurement in the visible and near infrared ranges.

2. Give a brief description of the procedure of thin layer chromatography. 5

3. Distinguish between the following (any *two*) : $3\times2=6$

(a) Scanning electron microscope and Transmission electron microscope

(b) Magnification and Resolution power of a microscope

(c) Standard compound microscope and Phase contrast microscope

4. Write short notes on any *two* of the following : $2\frac{1}{2}\times2=5$

(a) Beer-Lambert law

(b) Application of spectrophotometer

(c) Differences between colorimeter and spectrophotometer

(Continued)

5. (a) Write the principle of a kymograph. 6

Or

Give an outline of the handling procedure of rotary microtome.

(b) What do you mean by Svedberg unit? Give a description of any one kind of centrifuge machine. 1+4=5

(Biostatistics)

6. Rewrite the following sentences with the suitable words given : $1\times3=3$

(a) Frequencies of a series are added in ascending or descending order to construct histogram/frequency polygon/ ogive/pie chart.

(b) Geometric mean / median / mean deviation/mode can be defined as the average dispersion of all the values ignoring the sign from either the mean or median of a series.

(c) Student's *t*-test / Z-test / *F*-test / Chi-square test is used under normal distribution curve for small samples if the value of *n* is equal or less than 30.

(Turn Over)

7. Write short notes on any *three* of the following : $3 \times 3 = 9$

(a) An example of application statistics in the study of genetics

(b) Stratified random sampling

(c) Pie chart

(d) Histogram

8. Define standard deviation and write the formula for calculation of standard deviation from mean in ungrouped data. $3+3=6$

Or

Describe the method of regression analysis with an example. 6

(Continued)