Exam Date & Time: 28-Sep-2020 (02:00 PM - 05:45 PM)

PSG COLLEGE OF ARTS AND SCIENCE

Note: Writing 3hrs: Checking & Inserting Image : 30mins

MSc DEGREE EXAMINATION MAY 2020
(Fourth Semester)

Branch - ZOOLOGY

BIOSTATISTICS AND RESEARCH METHODOLOGY [18ZOP18]

Marks: 75   **Duration: 210 mins.**

SECTION A

Answer all the questions.

1)   Which one of the following is a primary data?
     (i)   Data from Zoological survey of India   (ii) Investigator collected data
     (iii) News paper data   (iv) Government census data   (1)

2)   Frequency polygon and frequency curve are alternative forms to _____ .
     (i)   Bar diagram   (ii)   Histogram
     (iii) Ogive   (iv) Pie diagram   (1)

3)   Which is a convenient mathematical tool to study the correlation between two random variables?
     (i)   Scatter diagram   (ii)   Pie diagram   (1)
     (iii) Scapula diagram   (iv) Ascii diagram

4)   Which one of the following is used to test the relationships between categorical variables?
     (i)   DMRT   (ii)   Chi-square   (1)
     (iii) ANOVA   (iv) Student's t-test

5)   Identify the most common precipitating fixative.
     (i)   Osmium tetroxide   (ii)   Potassium tetroxide
     (iii) Chromic acid   (iv) Methanol   (1)

6)   The maximum revolution of ultra-centrifugation is _____
     (i)   50,000 per minute   (ii)   60,000 per minute
     (iii) 10,000 per minute   (iv) 80,000 per minute   (1)

7)   Which is the radiation source of visible light in spectroscopic technique?
     (i)   Deuterium arc lamp   (ii)   Xenon arc lamp
     (iii) Photomultiplier tube   (iv) Light emitting diodes.   (1)

8)   (1)

Which chromatography has the stationary phase, as well as mobile phase are liquid?
(i)   Adsorption column chromatography   (ii)   Gel column chromatography
(iii) Partition column chromatography   (iv) Ion exchange column chromatography

9)   The most common size for index card is _____.
(i)   4 by 6 inches   (ii) 4 by 6 cm
(iii) 12 by 8 inches   (iv) 12 by 8 cm   (1)

10)   What is pagination?
(i)   Page format   (ii) Page number
(iii) Footnotes   (iv) Illustrations   (1)

SECTION B

Answer all the questions.

11)   What is primary data? Explain how do you collect them?
a)   (7)

[OR]
b)   Draw a pie chart using the following data (Convert into percentage and degree).

Football	Tennis	Cricket	Water polo	Ping pong
4	5	6	1	4

(7)

12)   Hospital records show that the patients suffering from a certain disease,
a)   75% die of it. What is the probability that of 6 randomly selected patients,   (7)
        4 will recover?

[OR]
b)   Write the differences between student's t test and chi-square test.   (7)

13)   Describe the single staining process with suitable example.
a)   (7)

[OR]
b)   Discuss the working principles of centrifugation.   (7)

14)   Describe the principle and application of paper chromatography.
a)   (7)

[OR]
b)   Write a short note on NMR.   (7)

15)   What is reference collection? Mention the importance in journal
a)   publication.   (7)

[OR]   (7)

b)   Comment on slide presentation.

SECTION C

Answer 3 out of 5 questions.

16)   Find out the mean, median and mode for the given data.

Roll. No	1	2	3	4	5	6	7	8	9	10
Marks	33	35	44	34	41	45	39	46	36	36

(10)

17)   Determine the coefficient correlation for the following data on the length (X in cm) and weight (Y in g) of fish.

X	5	7	3	1	9	12	8	3
Y	8	9	5	4	9	13	7	9

(10)

18)   Describe the working principle and applications of Transmission electron microscopy with neat diagram.

(10)

19)   Elucidate the principle and application of visible spectroscopy.

(10)

20)   How do you design your own thesis? Explain in detail.

(10)

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