The Assam Royal Global University, Guwahati
Royal School Of Behavioural & Allied Sciences
BA Psychology 1st Semester
Semester End Examination, December 2019
Course Title: Statistics in Psychological Research-I
Course Code: APY062C103/PS062C103

Time: 3 Hours   Maximum Marks: 70

The figures in the right-hand margin indicate full marks for the questions

SECTION-A

1. **Answer all questions:** $2 \times 8 = 16$
    a) Define discrete and continuous variable.
    b) What are the different types of graphs commonly used for representing data?
    c) Determine the median of the following series:
        94, 33, 86, 68, 32, 80, 48, 70, 66, 50
    d) How do you define standard deviation?
    e) Define standard score.
    f) What is a normal distribution?
    g) What do you mean by positive and negative correlation?
    h) Define Product moment correlation coefficient.

SECTION-B

2. **Answer any two of the following:** $6 \times 2 = 12$
    a) Explain briefly the application of Statistics in Psychology.
    b) Draw a histogram and frequency polygon for the following frequency distribution:

Weekly wages	30-31	32-33	34-35	36-37	38-39	40-41	42-43	44-45	46-47	48-49
No. of workers	2	9	25	30	49	62	39	20	11	3

    c) Represent the following data in an angular diagram:

Types of commodity	Expenditure in Rupees
Food	300
Rent	200
Cloths	125
Education	110
saving	90
Miscellaneous	75

3. **Answer any two of the following:** $7 \times 2 = 14$

   a) Calculate arithmetic mean and median of the following distribution given below. Hence calculate mode using the the relation among three.

Class interval	30-40	40-50	50-60	60-70	70-80	80-90
Frequency	4	30	45	15	6	9

   b) From the following data compute the value of Q_1, Q_3, D_4 and P_{60}.

Marks	0-10	10-20	20-30	30-40	40-50	50-60
No. of students	8	10	22	25	10	5

   c) Calculate the mean deviation from mean and also find the co-efficient of mean deviation.

Class Interval	15-25	25-35	35-45	45-55	55-65	65-75	75-85
Frequency	30	40	100	110	80	30	10

4. **Answer any two of the following:** $7 \times 2 = 14$

   a) Under what condition a binomial distribution tens to a normal distribution? Write the importance of normal distribution.

   b) Prove that the area under the normal probability curve between $\mu - 2\sigma$ and $\mu + 2\sigma$ is 95.45% if the area between 0 and 2 is 0.47725.

   c) The mean height of soldiers to be 68.22 inches with a variance of 10.8 inches. How many soldiers in a regiment of 1,000 would you expect to be (i) above 72 inches (ii) below 64.934 inches if the height is assumed to be normally distributed? [Provided that area between 0 and 1.15 is 0.3749 and area between 0 and 1 is 0.3413.]

5. **Answer any two of the following:** $7 \times 2 = 14$

   a) Interpret the values of correlation co-efficient. Also write the properties of correlation co-efficient.

   b) From the following data compute co-efficient of correlation between X and Y.

	X-series	Y-series
Arithmetic mean	25	18
Sum of squares of deviations from arithmetic mean	136	138

   c) A random sample of 5 college students is selected and their grades in Psychology and Statistics are found to be:

Students	1	2	3	4	5
Psychology	85	60	73	40	90
Statistics	93	75	65	50	80

   Compute Spearman's co-efficient of rank correlation.