MASTER OF PHYSICAL EDUCATION EXAMINATION 2019

(1st Year, 2nd Semester)

EDUCATIONAL APPLIED STATISTICS IN PHYSICAL EDUCATION AND SPORTS

PAPER : MP CC-201

Time : Three hours Full Marks : 70

GROUP - A

Answer ***any three*** questions.

1. What are the various measures of variability ? Compute standard deviation for the following data 19, 17, 16, 12, 5, 3, 6.

   Compute the Quartile deviation (Q.D.) from the following distribution :

Scores	f
91-100	1
81-90	3
71-80	4
61-70	2
51-60	6
41-50	5

Scores	f
31-40	8
21-30	6
11-20	4
1-10	2
N = 41	

2+4+9=15

2. Define probability. Write down the principles of normal curve. Define and explain the term skewness and kurtosis along with their main types. 2+5+8=15

3. What is coefficient of correlation ? What are the various types of correlation ? The performance of 12 soccer players on playing ability and skill test are depicted in the following table. Compute the rank correlation and test its significance at 5% level.

Playing Ability (x)	Skill Test (y)
30	16
32	18
29	17
25	17

30	13
27	19
28	14
27	19
28	14
27	15
30	12
26	18
31	20
32	18

2+3+10=15

4. Write down the assumptions of Non-parametric test. Mention the applications of Chi-square test. Following are the frequencies of performance of male and female students towards sports.

Sex	Prefer Sports	Do not prefer sports
Male	50	30
Female	25	35

Test whether sex is related with the preference of sports ?

3+3+9=15

5. What do you mean by standard error of mean ? What are the uses of t-test ? The vertical jump performance of 10 University students in ms. are : 64, 58, 62, 58, 60, 59, 50,

58, 65, 59 and those of 10 College students are 60, 48, 60, 68, 58, 59, 55, 65, 56 and 50.

Find out whether the two groups differ significantly in relation to the performance on vertical jump. [$t_{.05} = (18) = 2.10$]

3+2+10=15

GROUP - B

6. Write short notes on ***any two*** : 7.5×2=15

   a) Measures of Central Tendency

   b) Level of Significance and Degree of Freedom

   c) Z-Scale and Hull Scale

   d) ANOVA and its uses

GROUP - C

7. Answer ***any ten*** questions (Write correct option) : 1×10=10

   i) A parameter is :

      A) A sample characteristic

      B) A population characteristic

      C) Unknown

      D) Normally distributed

   ii) The number of accidents in a city during 2018 is

      A) Discrete variable B) Continuous variable

      C) Qualitative variable D) Constant

   iii) The first hand and unorganized form of data is called

      A) Secondary data B) Organized data

      C) Primary data D) None of the above

   iv) Statistics in a numerical quantity, which is calculated from :

      A) Population B) Data

      C) Observation D) Sample

   v) From the following which cannot be determined graphically ?

      A) Mode B) Mean

      C) Standard deviation D) Median

vi) Failing to reject the null hypothesis when it is false is :

A) Alpha B) Type I error

C) Beta D) Type II error

vii) When the correlation coefficient, r, is close to 1 :

A) There is no relationship between the two variables

B) There is a strong linear relationship between the two variables

C) It is impossible to tell if there is a relationship between the two variables

D) The slope of the regression line will be close to one

viii) Which of the following is true about the correlation coefficient r ?

A) It is a resistant measure of association

B) $-1 \leq r \leq 1$

C) If r is the correlation coefficient between X and Y, then –r is the correlation coefficient between Y and X.

D) All of the above.

ix) For the following data :

3 5 12 3 2, the standard deviation is

A) 8·944 B) 4·962

C) 13·2 D) 16·5

x) Sampling error can be reducing by :

A) Non-responsibility sampling

B) Increasing the population

C) Decreasing the sample size

D) Increasing the sample size

xi) The ANOVA procedure is a statistical approach for determining whether or not

A) The means of two samples are equal

B) The means of two or more sample are equal

C) The means of more than two samples are equal

D) The means of two or more populations are equal

xii) A process by which we estimate the value of dependent variable on the basis of one or more independent variable is called :

A) Correlation B) Regression

C) Residual D) Slope