Department of Physical Education

Master of Physical Education Examination - 2022

1st Year, 2nd Semester

MPCC-201

Sub: Applied Statistics in Physical Education and Sports

Time: Three Hours **Full Marks: 70**

Mention the Question number clearly before writing the answer

GROUP: - A

Answer **any three** questions: $15 \times 3 = 45$

1. What is applied statistics? Write down the functions and need of applied statistics. Why Standard Deviation is the most reliable measure of variability?

$3 + 8 + 4 = 15$

2. Discuss about dependent and independent variables with suitable example. Write down the advantages of mean and median. Calculate Mean and Quartile Deviation from the following frequency distribution.

Class	50 – 55	55 – 60	60 – 65	65 – 70	70 – 75	75 – 80	80 - 85
Frequency (f)	4	7	9	13	8	7	2

$3 + 3 + 4 + 5 = 15$

3. What is correlation? What are the various types of correlation? Calculate the Rank Order Correlation from the data source.

In a certain examination 10 students obtained the following marks in Mathematics and Physics. Find Rank Correlation of Coefficient.

Student Roll No.	1	2	3	4	5	6	7	8	9	10
Marks in Math	90	30	82	45	32	65	40	88	73	66
Marks in Physics	85	42	75	68	45	63	60	90	62	58

4. Describe the uses of t-test? The following data were collected from two separate groups of 144 men and 175 women, on an attitude scale.

	Mean	SD
Men	22.3	6
Women	28.1	4.5

(a) Calculate the difference between the means of two groups at 0.05 level of confidence.

(b) Discuss the results of the experiment in your own words.

* Table Value at 0.05 level of confidence is 1.97

5+6+4=15

5. What are the uses of non-parametric test? Explain standard error of mean in detail. Following are the scores of male female students towards sports:

Sex	**prefer sports**	**do not prefer sports**
Male	65	25
Female	25	35

Test whether sex is related with the performance of sports?

*Table Value of Chi Square at 0.05 level is 3.84

3+5+7=15

GROUP: - B

Write short notes on **any two** of the following: $7.5 \times 2 = 15$

6. Measures of variability
7. Normal probability curve
8. Standard Score
9. One tailed and two tailed test

GROUP: - C

Write the correct option **(any ten)**: $1 \times 10 = 10$

i. If Mean = 25.45, Median = 29.45 and $\sigma = 5$ then Skewness of the data will be:

a. -4.2
b. 4.2
c. 2.4
d. -2.4

ii. Which of the following statements would be false about multiple correlation?

I. It ranges from -1.00 to 1.00 only
II. It ranges from 0 to 1.00 only
III. It ranges from $-\sigma$ to $+\sigma$ only
IV. It ranges from -1.00 to 0 only

Codes

a. ii correct only
b. i, iii, iv correct only
c. iii, iv correct only
d. i, iii correct only

iii. α (alpha) probability indicates:

a. Level of significance
b. Magnitude of type II error
c. Standard error
d. None of these

iv. Statistical test of the significance of discrepancy between observed and expected result is provided by:

a. ANOVA
b. ANCOVA
c. t- test
d. Chi square test

v. Rejecting the null hypothesis when it is true is known as:

a. Type- I error
b. One tailed test
c. Type- II error
d. Two tailed test

vi. What is the full form of SPSS

a. Statistical Programme for the Social sciences
b. Statistical Package for the Social sciences
c. Statistical Programme for the Social study
d. Statistical Package for the Social study

vii. If the performance of a 25 volleyball player and 25 basketball player is to be compared using t-test what would be its df?

a. 52
b. 51
c. 48
d. 49

viii. The degree to which numerical data tend to spread about an average value called:
a. Constant
b. Flatness
c. Variation
d. Skewness

ix. Find out the correct sequential order of Hypothesis testing procedure:
I. State the decision rules
II. State hypothesis
III. Select appropriate test statistics
IV. Compute the appropriate test statistics

Codes

a. ii, i, iv, iii
b. i, iii, ii, iv
c. ii, iii, i, iv
d. i, ii, iii, iv

x. Match List-I with List-II and select the correct answer from the codes given bellow:

	List-I	List=II
I.	Discrete variable	1. Room temperature, sample size
II.	Attribute variable	2. Height, weight
III.	Continuous variable	3. Age, IQ, Scores
IV.	Controlled variable	4. Sit- ups, Goal scored

Codes.

	I	II	III	IV
a.	4	2	3	1
b.	4	3	2	1
c.	3	4	1	2
d.	2	1	4	3

xi. A parameter is:
a. A sample characteristic
b. A population characteristic
c. Unknown
d. Normal: normally distributed

xii. In a normally distributed data of 10,000 players, data of how many players will fall beyond $\pm 3.0\ \sigma$?
a. 13
b. 26
c. 52
d. 126