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22STU516N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2025
(Fifth Semester)

Branch - **STATISTICS**

EDUCATIONAL & PSYCHOLOGICAL STATISTICS

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 × 1 = 10)

Question No.	Question	K Level	CO
1	What is the point biserial correlation used for? a) For continuous variables b) For categorical variables c) For one continuous and one dichotomous variable d) For two dichotomous variables	K2	CO1
2	Tetrachoric correlation is often used for: a) Ordinal data b) Dichotomous data c) Continuous data d) Interval data	K2	CO1
3	Which score is considered a standard score? a) T score b) Z score c) Both a and b d) None of the above	K2	CO2
4	What does a T score of 50 represent? a) The score is at the average level b) The score is a raw score c) The score is above average d) The score is below average	K2	CO2
5	The primary function of judgment scaling is: a) To compare the validity of different tests b) To assess the reliability of test items c) To measure test difficulty d) To assign numerical values to subjective evaluations	K2	CO3
6	What type of data is best suited for the C scale? a) Ordinal data b) Continuous data c) Dichotomous data d) Dichotomous data	K2	CO3
7	Which method of reliability assessment involves administering the same test to the same group twice? a) Split-half method b) Test-retest method c) Parallel form method d) Rational equivalence	K1	CO4
8	How does lengthening a test affect its reliability? a) It decreases reliability b) It does not affect reliability c) It improves reliability d) It makes the test more difficult	K2	CO4
9	Which method of validity assessment is used when comparing the results of the same test at two different times? a) Test-retest validity b) Concurrent validity c) Predictive validity d) Content validity	K1	CO5
10	What does a significant validity coefficient suggest? a) The test is reliable b) The test is measuring c) The test has a low error rate d) The test has a normal distribution	K2	CO5

SECTION - B (35 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Question No.	Question	K Level	CO
11.a.	State the assumptions and limits of Biserial Correlation.	K2	CO1
	(OR)		
11.b.	Describe the need and importance of Partial correlations with examples.	K2	CO1
12.a.	What is the role of the Stannine scale in rating performance?	K2	CO2
	(OR)		

Cont...

12.b.	In the sub-tests of an entrance test, Kaarthika scored 56 in spelling test,72 in reasoning test, and 38 in arithmetic test. The mean and the SD of these sub-tests were as follows. Test | Spelling | Reasoning | Arithmetic M | 50 | 66 | 30 σ | 8 | 12 | 10 Assuming the distribution of these sub-tests as normal, find out in which sub-test Kaarthika performed better then the other two.	K4	CO3
13.a.	Explain the concept of the C scale and its application in rating performance.	K2	CO3
	(OR)		
13.b.	Discuss the difference between rating scales and ranking scale	K3	CO3
14.a.	Explain the concept of internal consistency reliability.	K2	CO4
	(OR)		
14.b.	What is the relationship between test length and reliability? Explain why longer tests tend to have higher reliability.	K2	CO4
15.a.	Discuss face validity and its role in test development.	K2	CO5
	(OR)		
15.b.	Explain criterion-related validity and how it is used in the context of test development.	K2	CO5

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Question No.	Question	K Level	CO
16	The following tables shows that the distribution of the scores on an achievement test earned by two groups of students those who passed and those who failed in a test of Arithmetic. Compute the coefficient of biserial correlation. Achievement Score Range | Passed | Failed 185–194 | 7 | 0 175–184 | 10 | 0 165–174 | 16 | 0 155–164 | 24 | 6 145–154 | 35 | 15 135–144 | 40 | 26 125–134 | 26 | 13 115–124 | 13 | 5 105–114 | 5 | 0	K4	CO1
17	Discuss the methods for calculating T-scores for grouped and ungrouped data. Provide a detailed example.	K2	CO2
18	What is the relationship between judgment scaling and the normal distribution? Explain how judgment scaling utilizes the normal curve.	K3	CO3
19	Discuss the different methods for assessing the reliability of a test, including test-retest, split-half, and parallel forms. Provide examples of when each method should be used.	K2	CO4
20	Explain the importance of construct validity. How can researchers assess whether a test truly measures the construct it is intended to measure?	K3	CO5

Z-Z-Z END