

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2026
(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)

Module No	Question No.	Questions	K Level	CO
	1	Which type of correlation coefficient is used when both variables are dichotomous? a) Point biserial correlation b) Spearman's rank correlation c) Tetrachoric correlation d) Pearson's correlation	K2	CO1
	2	What is the primary use of multiple regression equations? a) To assess the strength of a relationship between two variables b) To predict the dependent variable based on multiple independent variables c) To measure the degree of correlation between different test items d) To validate a hypothesis based on observed data	K2	CO1
	3	Which of the following is used to convert raw scores into a scale with a mean of 50 and a standard deviation of 10? a) T-scores b) Z-scores c) Normalized scores d) C-scores	K2	CO1
	4	What does a Z score of +2 represent? a) The score is two standard deviations below the mean b) The score is two standard deviations above the mean c) The score is exactly at the mean d) The score is equal to the standard deviation	K2	CO3
	5	Which type of data is best suited for judgment scaling? a) Ordinal data b) Nominal data c) Continuous data d) Dichotomous data	K2	CO3
	6	Which scale involves nine levels of performance, ranging from very low to very high? a) C scale b) Likert scale c) T scale d) Stannine scale	K2	CO4
	7	Which of the following is a method for assessing the reliability of test scores? a) Face validity b) Content validity c) Criterion-related validity d) Test-retest method	K1	CO3
	8	Which method of reliability testing involves correlating odd-numbered and even-numbered items? a) Test-retest method b) Parallel form method c) Split-half method d) Content validity method	K2	CO4
	9	Which type of validity is established by reviewing the relationship between test scores and an external criterion? a) Criterion-related validity b) Construct validity c) Face validity d) Content validity	K1	CO4
	10	What is the relationship between reliability and validity? a) A test can be reliable but not valid b) A test can be valid but not reliable c) Reliability is a prerequisite for validity d) A test can be both reliable and valid	K2	CO4

Cont...

SECTION - B (35 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 × 7 = 35)

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Module No.	Question No.	Question	K Level	CO
1	11.a.	Describe the Tetrachoric correlation with an example.	K2	CO1
	(OR)			
	11.b.	Write a note on computational procedure of partial correlation.		
2	12.a.	What is the purpose of Z-scaling, and how is it applied to raw scores?	K4	CO2
	(OR)			
	12.b.	Explain the difference between Z-scores and T-scores.		
3	13.a.	What is the purpose of judgment scaling in psychological testing?	K2	CO3
	(OR)			
	13.b.	Discuss the advantages and disadvantages of using the C scale in educational assessments.		
4	14.a.	What is the test-retest method, and how does it assess the reliability of test scores?	K2	CO4
	(OR)			
	14.b.	Explain the split-half method and how it is used to measure test reliability.		
5	15.a.	What is the difference between reliability and validity?	K3	CO5
	(OR)			
	15.b.	Explain criterion-related validity and how it is used in the context of test development.		

SECTION -C (30 Marks)

Answer ANY THREE questions

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

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Module No.	Question No.	Question	K Level	CO																																				
1	16	The data given in the following table shows the distribution of scores of 100 students on a certain test (X) and on another test (Y) which was simply scored as right or wrong, 1 and 0. Compute the necessary coefficient of correlation. <table><tr><th>Scores on Test X</th><th>Those who responded rightly</th><th>Those who responded wrongly</th></tr><tr><td>70–74</td><td>3</td><td>0</td></tr><tr><td>65–69</td><td>6</td><td>1</td></tr><tr><td>60–64</td><td>6</td><td>2</td></tr><tr><td>55–59</td><td>5</td><td>4</td></tr><tr><td>50–54</td><td>6</td><td>2</td></tr><tr><td>45–49</td><td>7</td><td>8</td></tr><tr><td>40–44</td><td>6</td><td>3</td></tr><tr><td>35–39</td><td>3</td><td>6</td></tr><tr><td>30–34</td><td>3</td><td>3</td></tr><tr><td>25–29</td><td>1</td><td>4</td></tr><tr><td>20–24</td><td>0</td><td>12</td></tr></table>	Scores on Test X	Those who responded rightly	Those who responded wrongly	70–74	3	0	65–69	6	1	60–64	6	2	55–59	5	4	50–54	6	2	45–49	7	8	40–44	6	3	35–39	3	6	30–34	3	3	25–29	1	4	20–24	0	12	K4	CO1
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2	17	Explain how the Stannine scale categorizes performance. Discuss its significance in educational testing.	K4	CO2																																				
3	18	Compare rating scales and ranking scales. Discuss the applications and limitations of each.	K3	CO3																																				
4	19	Discuss the effect of test length on reliability. How can test developers increase the reliability of a test without increasing its length?	K2	CO4																																				
5	20	Discuss face validity and its role in test development. Why is it not sufficient on its own to validate a test, and how can it impact the acceptance of a test?	K3	CO5																																				