

**PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)**

**BSc DEGREE EXAMINATION DECEMBER 2024
(Third Semester)**

Branch: **PSYCHOLOGY**

PSYCHOLOGICAL STATISTICS II

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	Which of the following refers to a method of sampling in which a core group of participants who are initially sampled for a search study recruit or recommend other potential participants? a Simple random sampling c. Quota sampling b Snowball sampling d. Stratified random sampling	K1	CO1
2	Population value are labeled as. a Statistic b Parameter c. data d. variable	K2	CO1
3	Using a goodness of fit test, we can assess whether a set of obtained frequencies differ from a set of. a Actual frequency c. expected frequency b Normal frequency d. ideal frequency	K1	CO2
4	A statement that is accepted if the sample data provide sufficient evidence that the null hypothesis is false is called a Simple hypothesis c. statistical hypothesis b Composite hypothesis d. alternative hypothesis	K2	CO2
5	If the values of two variables move in the same direction. a The correlation is said to be linear b The correlation is said to be non-linear c The correlation is said to be negative d The correlation is said to be positive	K1	CO3
6	Find out, which of the following statement is true about the arithmetic mean of two regression coefficient a It is less than the correlation coefficient b It is equal to the correlation coefficient c It is greater than or equal to the correlation coefficient d It is grater than the correlation coefficient	K2	CO3
7	Which type of variable allows for meaningful intervals between measurements but does not have a true zero points? a Nominal b. ordinal c. interval d. ratio	K1	CO4
8	A researcher measured the same group of people's physiological reactions while watching horror films and compared them to when watching erotic films. The resulting data were skewed. What test should be used to analyse the data? a Independent t-test c. Wilcoxon signed ranked test b Dependent t-test d. Mann-Whitney test	K2	CO4
9	Face validity refers to a The degree to which an instrument can forecast an outcome b Statistical procedure establish the contribution of each important factor c How well an instrument compares with a second assessment concurrently done d A logic link between research instrument and objective	K1	CO5
10	A group of students took a cognitive development test on Monday and then took the same test again the following week. Most likely researchers were assessing the a Test retest b. split half c. odd-even d. inter-item	K2	CO5

Cont...

SECTION - B (35 Marks)Answer **ALL** questions**ALL** questions carry **EQUAL** Marks

(5 × 7 = 35)

Question No.	Question	K Level	CO																																	
11.a.	Explain and define population and sampling. Write a note of properties of sampling	K2	CO1																																	
(OR)																																				
11.b.	Explain sampling and non sampling errors.																																			
12.a.	Sketch out the types of error.	K3	CO2																																	
(OR)																																				
12.b.	Differentiate between t test and z test																																			
13.a.	Explain types of correlation.	K5	CO3																																	
(OR)																																				
13.b.	Calculate the rank correlation coefficient for the rank of 10 students assigned by two teachers. Students																																			
	<table><tr><td>Students</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>Teacher 1</td><td>8</td><td>7</td><td>6</td><td>3</td><td>2</td><td>1</td><td>4</td><td>9</td><td>10</td><td>5</td></tr><tr><td>Teacher 2</td><td>10</td><td>8</td><td>5</td><td>2</td><td>1</td><td>3</td><td>6</td><td>9</td><td>7</td><td>4</td></tr></table>			Students	1	2	3	4	5	6	7	8	9	10	Teacher 1	8	7	6	3	2	1	4	9	10	5	Teacher 2	10	8	5	2	1	3	6	9	7	4
	Students			1	2	3	4	5	6	7	8	9	10																							
	Teacher 1	8	7	6	3	2	1	4	9	10	5																									
Teacher 2	10	8	5	2	1	3	6	9	7	4																										
14.a.	Analyse scales of measurement.	K4	CO4																																	
(OR)																																				
14.b.	Calculate the median for the following frequency distribution.																																			
	<table><tr><td>Marks</td><td>45-50</td><td>40-45</td><td>35-40</td><td>30-35</td><td>25-30</td><td>20-25</td><td>15-20</td><td>10-15</td><td>5-10</td></tr><tr><td>f</td><td>10</td><td>15</td><td>26</td><td>30</td><td>42</td><td>31</td><td>24</td><td>15</td><td>7</td></tr></table>			Marks	45-50	40-45	35-40	30-35	25-30	20-25	15-20	10-15	5-10	f	10	15	26	30	42	31	24	15	7													
	Marks			45-50	40-45	35-40	30-35	25-30	20-25	15-20	10-15	5-10																								
f	10	15	26	30	42	31	24	15	7																											
15.a.	Illustrate content validity.	K3	CO5																																	
(OR)																																				
15.b.	Analyse the application of SPSS.																																			

SECTION -C (30 Marks)Answer **ANY THREE** questions**ALL** questions carry **EQUAL** Marks

(3 × 10 = 30)

Questi on No.	Question	K Level	CO																						
16	Explain random sampling.	K5	CO1																						
17	The life time of electric bulbs for a random sample of 10 from a large consignment gave the following data. <table><tr><td>Item</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>X</td><td>4.2</td><td>4.6</td><td>3.9</td><td>4.1</td><td>5.2</td><td>3.8</td><td>3.9</td><td>4.3</td><td>4.4</td><td>5.6</td></tr></table> Can be accept the hypothesis that the average life time of bulbs is 4000 hours? $t=2.147$.	Item	1	2	3	4	5	6	7	8	9	10	X	4.2	4.6	3.9	4.1	5.2	3.8	3.9	4.3	4.4	5.6	K5	CO2
Item	1	2	3	4	5	6	7	8	9	10															
X	4.2	4.6	3.9	4.1	5.2	3.8	3.9	4.3	4.4	5.6															
18	Illustrate the regression equation of Y on X and X on Y.	K4	CO3																						
19	Outline the Goodness of fitness using chi square and its the steps to compute with example.	K4	CO4																						
20	Determine the methods of reliability.	K4	CO5																						