

[This question paper contains 8 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 9581

Unique Paper Code : 12483904

**Name of the Paper : Data Base and Statistical Packages
(SEC)**

**Name of the Course : B.A. (Hons) Business Economics,
2018 (CBCS)**

Semester : IV

Duration : 3 Hours

Maximum Marks : 50

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any five questions.
3. All questions carry equal marks.
4. Use of simple calculators and tables are allowed.

(a) You are given information about the effectiveness of weight loss programme for 10 persons whose weights before joining the programme and after the programme are as under

<i>Weight Before</i>	<i>Weight After</i>
145.0	143.0
112.0	110.0
120.0	117.0
133.0	130.0
130.0	130.0
119.0	119.0
133.0	134.0
125.0	128.0
126.0	123.0
140.0	140.0

You are required to

- (i) State the Null and Alternate Hypothesis.
- (ii) How do we decide whether the Hypothesis would be accepted or rejected. Which test should be employed for testing the hypothesis in SPSS
(2×3=6)

(b) Explain the following e-resources.

(i) Information Gateways

(ii) Institutional Repository System (2×2=4)

(a) The following SPSS output is the result of a relation :
 No. of hours spent on studying econometrics paper and
 Marks Obtained : 1,2 or 3.

Model Summary^a

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.563 ^a	.317	.279	.69031	.317	8.336	1	18	.010	1.469

^a Predictors: (Constant), No. of hours spent for studying

^b Dependent Variable: 123

- (i) Does the model depict a good relation between the variables, If yes then how do you arrive at this conclusion, if no, then what is missing in the information
- (ii) Explain the terms R, R Square and Adjusted R Square & Std Error of the Estimate in the SPSS output
- (iii) Does the figure given against Durbin –Watson play any role in the above model. Explain.

(2,2,2)

(b) A researcher wants to compute log of national income. How will he do it in SPSS? Also show the different ways to test normality of the error term in SPSS.

(4)

3. (a) You are given information about the tickets sold by four Metro Stations during a time interval of 5 minutes each for common timings 9:00 A.M – 9:05 A.M, 10:10 A.M – 10.15 A.M, 1:20 P.M – 1:25 P.M, 3:30 P.M – 3:35 P.M, 4:35 P.M – 4:40 P.M, 5:45 P.M – 5:50 P.M, 7:45 P.M – 7:50 P.M, 9:50 P.M – 9:55 P.M. The recordings for the first two stations were made EIGHT times, the recording for last two stations was done only FIVE times.

Station I	Station II	Station III	Station IV
22	20	24	22
19	22	20	22
22	17	20	22
17	17	17	16
16	17	18	16
16	22	22	16
20	18		
12	13		

- (i) Which test you would employ to test the efficiency of Ticket Counters at Metro Station? State the Null and Alternate Hypothesis. What is the criteria for accepting or rejecting the Null Hypothesis?
- (ii) What do you understand by re-coding of the variable? (4,3)
- (b) What is the meaning of the term 'Association of Attributes'? Which statistical technique should be applied in case our data fits in to the above term and why? (3)
- (a) How is it possible to get more information from the same amount of data by using a database approach as opposed to a non-database approach?
- (b) A game of chance involves rolling 3 dice. The winnings are directly proportional to the total number of sixes rolled. Suppose a player plays a game 100 times, with the following observed counts :

Number of Sixes	Number of Rolls
0	48
1	35
2	15
3	3

P.T.O.

Conduct a chi square test to determine whether the dice are fair? (4,6)

5. (a) Database approach to processing offers clear advantages over alternative data management methods. Discuss. (6)

(b) Given below is the regression output in SPSS for Imports(Y) regressed on GDP(X) and exchange rate (V2)

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.767 ^a	.588	.539	3.4828	2.611

a. Predictors: (Constant), X, V2

b. Dependent Variable: Y

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	294.192	2	147.096	12.127	.001 ^a
	Residual	206.210	17	12.130		
	Total	500.402	19			

a. Predictors: (Constant), X, V2

b. Dependent Variable: Y

	Unstandardized		t	Sig.	Collinearity Statistics		
	Coefficients				Lower Bound	Tolerance	VIF
	B	Std. Error					
(Constant)	4.202	1.972	2.131	.048	.042		
V2	.766	.158	4.858	.000	.433	.954	1.048
X	.003	.014	.251	.805	-.026	.954	1.048

From the results given above :-

- (a) Prepare the regression equation. (1)
- (b) Do you think 't statistic for slope coefficient is statistically significant? (1)
- (c) Does the model have a problem of autocorrelation? (1)
- (d) Comment on the multicollinearity? (1)

Comment on the following questions (attempt any 4 out of five) :

(i) Scale Vs Nominal Variables

(ii) Digital Library

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(iii) DBMS

(iv) Entities

(v) Purpose of e resources

(2.5×4=10)