

For Candidates Admitted From 2015-2017

2015 BST 63C

ROLL NO.....

B.Sc., DEGREE EXAMINATIONS, APRIL 2019

STATISTICS SEMESTER – VI

AOS - STATISTICAL QUALITY CONTROL

Time: 3 Hrs

Max. Marks: 75

PART - A (10 X 2 = 20)

ANSWER ALL THE QUESTIONS

1. Define Statistical Quality Control.
2. What is production process?
3. State any two control charts for attributes.
4. State the 3 sigma control limits for p Chart.
5. What is Product control?
6. Define AQL.
7. What is single sampling plan?
8. State the ATI of Double Sampling Plan.
9. What do you mean by Sequential Sampling Plan?
10. State OC function of SPRT for testing $H_0: \theta = \theta_0$ Vs $H_1: \theta = \theta_1$.

PART - B (5 X 5 = 25)

ANSWER ALL THE QUESTIONS

11. a. Briefly explain the benefits of SQC.
(or)
b. Briefly explain the uses of SQC.
12. a. Briefly explain the applications of c chart.
(or)
b. Briefly explain the procedure of constructing R chart.
13. a. Briefly explain Consumer risk and Producer risk.
(or)
b. Briefly explain LTPD and AOQL.
14. a. Briefly explain the procedure of single sampling plan with flow chart.
(or)
b. Briefly explain the OC curve of Double sampling plan with flow chart.
15. a. Briefly explain the Single Sampling Plan Vs Double Sampling Plan.
(or)
b. Briefly explain five points on ASN curve of sequential sampling plan.

PART - C (3 X 10 = 30)

ANSWER ANY THREE QUESTIONS

16. Explain the different causes of variation in quality.
17. A Machine is set to deliver the packets of a given weight Ten samples of size five each were examined and the following results were obtained.

Sample Number	1	2	3	4	5	6	7	8	9	10
Mean	43	49	37	44	45	37	51	46	43	47
Range	5	6	5	7	7	4	8	6	4	6

Calculate the values for central line and the central limits for the Mean Chart and range chart. Comment on the state of control. (Given for $n=5$, $d_2 = 2.326$ $d_3 = 0.864$).

18. Explain acceptance sampling plan and the applications in industries.
19. i) Compare the advantages and disadvantages of SSP and DSP.
ii) State the AOQ, ASN functions of SSP and DSP.
20. Explain the OC of sequential sampling plan and five points on OC curve.

15 BST 44A

REG.NO.....

B.Sc. DEGREE EXAMINATIONS, APRIL 2019

STATISTICS SEMESTER : IV

MATHEMATICAL ECONOMICS

Time : 3 HRS.

Max.Marks: 75

PART -A (10 X 2 =20)

ANSWER ALL THE QUESTIONS

1. Define Demand Function?
2. What is the Revenue Function?
3. What are the indifference curve?
4. Write the formula for marginal utility of q_1 and q_2 .
5. Define average cost curves.
6. Write the formula for average cost and marginal cost function.
7. What is the market Equilibrium.
8. Write the formula for Monopolist demand function of X and Y.
9. Define Production function.
10. State the formula for Elasticity of substitution.

PART -B (5 X 5 =25)

ANSWER ALL THE QUESTIONS

11. a. If the demand law is $x = \frac{20}{p+1}$ find ed with respect to price at the point where $p = 3$.
(or)
b. Derive the Revenue function.
12. a. Explain the Maximisation of the consumer's utility function.
(or)
b. Write the consumer's equilibrium of the substitution effect.
13. a. Derive the average and marginal cost function.
(or)
b. If the total cost function is $C = \frac{1}{3}q^3 - 3q^2 + q$ find at level of

output AC will be minimum and what level will it be.

14. a. The total cost C of output x is given by $C = \frac{2}{5}x + \frac{35}{2}$

Find i. Cost when output is 4 units

ii. Average cost of output of 10 unit

iii. Marginal cost function when output is 3 units.

(or)

- b. Derive the Discriminating Monopoly function.

15. a. Obtain σ for

$$q = A \left[\alpha K^{-\beta} + (1-\alpha)L^{-\beta} \right]^{\frac{1}{\beta}}$$

$$[A > 0; 0 < \alpha < 1; \beta > -1]$$

(or)

- b. Explain the constant product curves.

PART -C (3 X 10 =30)

ANSWER ANY THREE QUESTIONS

16. Write the point Elasticity demand function.

17. Derive the marginal Revenue function is $p_m = \left\{ \frac{ab}{(x+b)^2} - c \right\}$ show

that $p = \left(\frac{a}{x+b} \right)$ is the demand law.

18. Explain the relationship between total, average, marginal revenue curves.

19. Explain the Input output models.

20. Derive the Elasticity of Substitution function.

14. a. Explain the concept of correlation from four fold tables.

(OR)

b. Explain the computation of contingency coefficient.

15. a) Explain the limitations of correlation.

(OR)

b) Explain intra class correlation with example.

PART- C (3×10=30 Marks)

Answer ANY THREE Questions

16. Explain percentile score and mention its merits and demerits.

17. Describe the importance of Cronbach's alpha in the computation of internal consistency reliability.

18. Explain test procedure for measuring I.Q. with example.

19. Compute and interpret the correlation coefficient of the following data related to grades of 8 students selected randomly:

Students	A	B	C	D	E	F	G	H
Maths	53	86	59	73	64	70	44	56
Statistics	59	74	53	76	49	67	58	61

20. Explain multiple correlation. Discuss its limits, order and characteristics.

For Candidates Admitted From 2015-2017

2015-17 BST 46S

REG. NO.....

B.Sc., DEGREE EXAMINATIONS, APRIL 2019

STATISTICS SEMESTER – IV

SBS: PSYCHOLOGICAL STATISTICS

Time: 3 Hrs

Max. Marks: 75

Part - A (10×2=20 Marks)

Answer ALL Questions

1. Define Normal curve.
2. Write the difference between interval and ratio scale.
3. Define index of reliability.
4. Write a short note on reliability test scores.
5. Define intelligence quotient.
6. Define construct validity.
7. Explain the properties Correlation.
8. Write a note on curvilinear correlation.
9. Distinguish between partial and multiple correlation.
10. Define partial correlation.

PART- B (5×5=25 Marks)

Answer ALL Questions

11. a) Describe Normalised scores.

(OR)

b) Explain importance of measurement in psychology.

12. a) Explain parallel tests with example.

(OR)

b) Explain test-retest method with example.

13. a) Differentiate between reliability and validity.

(OR)

b) Explain Intelligence tests.

P.T.O