

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION MAY 2026
(Sixth Semester)

Branch - STATISTICS

INDUSTRIAL 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.	Question	K Level	CO
1	1	Quality means i) low cost ii) fitness for use iii) high production iv) inspection only	K1	CO1
	2	ISO 9000 relates to i) Environmental control ii) Quality system standards iii) Safety rules iv) Marketing standards	K2	CO1
2	3	Chance or random variation in the manufactured product is: i) controllable ii) not controllable iii) both (i) and (ii) iv) none of the above	K1	CO1
	4	Control charts consist of i) three control limits ii) upper and lower control limits iii) the level of process iv) all the above	K2	CO2
3	5	The maximum limit of percentage defectives in a finally accepted product is called i) acceptance quality level (AQL) ii) average outgoing quality limit (AOQL) iii) lot tolerance percentage defective (LTPD) iv) all the above	K1	CO2
	6	Inspection by attributes over inspection by variables requires: i) less time ii) less skill iii) less calculation iv) all the above	K2	CO2
4	7	Acceptance sampling plans are preferable due to : i) the economy in inspection ii) protection to perishable items iii) increased efficiency in the inspection of items iv) all the above	K1	CO3
	8	Sampling inspection procedure by variables as compared to by attributes is : i) more prevalent ii) not practised iii) less prevalent iv) all the above	K2	CO3
5	9	The lifetime of a component following constant failure rate is modelled by i) Normal distribution ii) Weibull distribution iii) Binomial distribution iv) Exponential distribution	K1	CO4
	10	Hazard rate of exponential distribution is i) increasing ii) decreasing iii) constant iv) random	K2	CO4

Cont...

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

(5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	What is quality? Write the specifications and characteristics of quality.	K2	CO1
	(OR)			
	11.b.	Define ISO 9000.What are the elements and benefits of ISO 9000?		
2	12.a.	Define Statistical Quality Control . Explain the various Causes of variations.	K2	CO2
	(OR)			
	12.b.	Explain about p-chart a.nd np- chart		
3	13.a.	Define Statistical Product control. Explain about producer's and consumer's risk .	K3	CO3
	(OR)			
	13.b.	What do you mean by Single Sampling Plan? State the advantages and disadvantages of Single Sampling Plan.		
4	14.a.	What do you understand by Acceptance Sampling? Write the various assumptions for acceptance sampling.	K3	CO3
	(OR)			
	14.b.	State the advantages and disadvantages of acceptance sampling plan.		
5	15.a.	Derive the hazard function of exponential distribution.	K2	CO4
	(OR)			
	15.b.	Describe memory-less property.		

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

(3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Define TQM . Discuss about the various models and benefits of TQM.	K3	CO1
2	17	Derive the control limits for X- chart and R-chart.	K2	CO2
3	18	Define Double sampling plan, obtain its OC function. What are the advantages of the Double sampling plan over Single sampling plan.	K3	CO2
4	19	Explain the switching rules between normal, tightened and reduced plans.	K2	CO3
5	20	Explain Weibull distribution and derive its hazard function .	K2	CO4

Z-Z-Z

END