







10. The following item consists of two statements, one labeled as the “Assertion (A)” and the other as “Reason (R). You are to examine those two statements carefully and select the answers to these items using the codes given below: CO5 [K4]

Assertion (A): Operational readiness of a system depends on availability.

Reason (R): It is designing a system so that it is available for performing its required functions at a stated instance of time.

- a) both A and R are individually true, and R is the correct explanation of A      b) both A and R are individually true, but R is not the correct explanation of A  
c) A is true but R is false      d) A is false but R is true.

**PART B (10 x 2 = 20 Marks)**

11. Differentiate attribute data from variable data with an example. CO1 [K2]
12. Quality assurance is the modern quality approach- justify. CO1 [K2]
13. With a flow chart demonstrate the method used in double sampling plan. CO2 [K3]
14. “The maximum percent defective or the number of defects per 100 items that for the purpose of sampling inspection, can be considered satisfactory as a process average” - why is this called as in acceptance sampling? CO2 [K2]
15. The concept of total quality management depends on defining two terms namely supplier and customer at each stage of a process. Analyze with an example. CO4 [K3]
16. Quality Function Deployment depends on how the requirements told by the customer is transformed into features of a product or service that totally fall in line with what the customer said they wanted. Explain the professional term that stands for this statement. CO4 [K2]
17. List two benefits of ISO 9000 for a company to compete in the international market. CO3 [K2]
18. Give an application for active redundancy under the topic of reliability. CO5 [K3]
19. Give an application for “Standby redundancy” under the topic of reliability? CO5 [K2]
20. Factorial Design – What does it involve? CO3 [K2]

**PART C (6 x 5 = 30 Marks)**

21. Differentiate continuous data and discrete data with application for understanding quality aspects. CO1 [K4]
22. Explain the general model of a control chart. CO1 [K2]

23. Give the procedure adapted for stratified sampling. CO2 [K<sub>3</sub>]
24. Give an application for series system of reliability. CO5 [K<sub>3</sub>]
25. Compare the concept of reliability, availability, and maintainability with that of customer satisfaction. CO5 [K<sub>4</sub>]
26. Under the topic of Operation Characteristic curves, what do the terms producer's risk and consumer's risk mean? Explain with applications to reflect their impact. CO2 [K<sub>2</sub>]

**Answer any FOUR Questions**

**PART D (4 x 10 = 40 Marks)**

27. List the types of control charts under control charts for variables and control charts for attributes and specify the application of each type of control chart? CO1 [K<sub>3</sub>]
28. Draw an OC curve and explain how it is constructed with applications. CO2 [K<sub>3</sub>]
29. With an application explain how Taguchi orthogonal array experiments are conducted? CO3 [K<sub>3</sub>]
30. Analyze the house of quality under QFD with applications. CO4 [K<sub>4</sub>]
31. Reliability allocation – explain the concept with an application. CO5 [K<sub>3</sub>]

\*\*\*\*\*