858 Register No.

April 2019

Time – Three hours
(Maximum Marks: 75)

(N.B: (1) Q.No. 8 in PART – A and Q.No. 16 in PART – B are compulsory. Answer any FOUR questions from the remaining in each PART – A and PART – B

(2) Answer division (a) or division (b) of each question in PART – C.

(3) Each question carries 2 marks in PART – A, 3 marks in Part – B and 10 marks in PART – C.

(4) Standard curves and statistical tables are permitted.)

PART – A

1. State the important elements of TQM.
2. Which type of companies should go for ISO 9001 certification?
3. List the four phases / steps in Deming wheel.
4. What are the types of check sheets commonly used?
5. What are the three principal measures of central tendency?
6. What do you understand by six sigma?
7. Under what situation, the use of C-chart is more appropriate?
8. What are the purposes of tree diagrams?

PART – B

9. What are the objectives of brain storming?
10. What is a vision statement? Give an example of vision statement.
11. What are the objectives of 5S?
12. What steps would you take to implement quality circles in your company?
13. Name the five phases of achieving six sigma.
14. Differentiate control limits and specification limits.
15. What are the six big losses that are to be eliminated by TPM?

[Turn over ...

16. Given the following frequency distribution.

Daily wages in ₹.	No of workers	Daily wages in ₹.	No of workers	Daily wages in ₹.	No of workers
125-175	2	275-325	14	425-475	6
175-225	22	325-375	3	475-525	1
225-275	19	375-425	4	525-575	1

Calculate the mean.

PART – C

17. (a) (i) What is brain storming? (ii)Draw the flow diagram of activities in brain storming. Explain each activity.

(Or)

(b) Explain the seven steps of strategic planning with a block diagram.

18. (a) (i) What are the seven basic quality control tools?
(ii) How are these tools used for solving quality control problems in organisation?

(Or)

(b) (i) What is a scatter diagram?
(ii) Write the procedure to construct scatter diagram for a given problem.

19. (a) The following are the scores of two batsman Sachin and Dravid in a series of innings.

Sachin	12	115	6	73	7	19	119	36	84	29
Dravid	47	12	16	42	4	51	37	48	13	0

Who is better score getter and who is more consistent?

(Or)

(b) Test have indicated that the tensile strength of certain aluminium alloy averages 1780 kg/cm² with a standard deviation of 220 kg/cm². If the distribution is normal, what percentage of the casting will have (i)Tensile strength less than 1400 kg/cm² (ii)More than 1500 kg/cm².

20. (a) The daily production in machine shop is 1000 components. These components are inspected by Go and No Go gauges. A sample of 100 is inspected daily for continuously ten days. The samples are taken at random. Compute the control limits for (i)p-chart and (ii)np-chart and also draw the charts.

Date	1	2	3	4	5	6	7	8	9	10
Rejection	2	10	6	20	18	14	15	12	8	6

(Or)

(b) The following are the $\bar{X}$ and R values of 4 subgroups of readings $\bar{X}$ = 10.2, 12.1, 10.8 and 10.9. R=1.1, 1.3, 0.9 and 0.8. The specification limits for the components are 10.7 ± 0.2.
(i) Establish the control limits for $\bar{X}$ and R charts.
(ii) Find the process capability.
(iii) Will the product able to meet its specification. Take for sub group size of 4, A_2=0.73, D_3=0, D_4=2.28 and d_2=2.059 respectively.

21. (a) (i) What are the objectives of benchmarking?
(ii) Describe the steps in benchmarking process.

(Or)

(b) (i) JIT as a process – explain.
(ii) What are the concepts of JIT?
(iii) What are the objectives of JIT?
