

B.Tech. SEM -V Production 2014 Course (CBCS) : WINTER - 2018
SUBJECT : METROLOGY AND QUALITY CONTROL

Day : Tuesday
Date : 27/11/2018

W-2018-2427

Time : 02.30 PM TO 05.30 PM
Max. Marks : 60

N. B. :

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labeled diagram **WHEREVER** necessary.
- 3) Assume suitable data, if necessary.

Q. 1 Discuss in detail with neat sketch auto collimator and angle dekkor. **(10)**

OR

Q. 1 Explain with neat sketch the vernier caliper and micrometer screw gauge. **(10)**

Q. 2 a) Explain the following: **(05)**

- i) Flatness
- ii) Straightness
- iii) Concentricity

b) Explain with neat sketch the co-ordinate measuring machine. **(05)**

OR

Q. 2 Explain with neat sketch the plug gauge and ring gauge **(10)**

Q. 3 Discuss with neat sketch the various methods to measure the gear tooth parameters. **(10)**

OR

Q. 3 Calculate the effective diameter for m 24 × 3 plug gauge by using floating carriage micrometer for which readings were taken as below:

- i) Diameter of standard cylinder 22.001 mm
- ii) Micrometer reading over std. cylinder with 2 wire of same diameter was 12.9334 mm
- iii) Micrometer reading over the plug screw gauge and wire was 12.1124 mm

Best wire size was used for above measurement neglect the rake and compression errors.

Q. 4 In a factory manufacturing permanent magnets the number of magnets inspected in each week and number found defective are given below. Calculate the fraction defective of each week and plot the P chart: **(10)**

Week No.	1	2	3	4	5	6	7	8	9	10	11	12
No. of Magnets inspected	724	763	748	748	724	727	726	719	759	745	736	939
No. found defective	48	83	70	85	45	56	48	67	37	52	47	50

P. T. O.

OR

Q. 4 a) Explain with appropriate examples the difference between inspection and quality control. **(05)**

b) Discuss in detail the concept of quality circle. **(05)**

Q. 5 Describe with neat sketch the construction and working of quality function deployment. **(10)**

OR

Q. 5 Explain by giving appropriate example the concept of 'Design of Experiment'. **(10)**

Q. 6 Discuss the structure of ISO 9000-2000 series along with their clause. **(10)**

OR

Q. 6 Discuss the interpretation and implementation of ISO 9000 series. Explain the documentation required for the same. **(10)**

* * * * *