Total No. of Questions : 4]

SEAT No. :

PA-10012

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S.E. (Robotics & Automation) (Insem)

METROLOGY AND QUALITY ASSURANCE

(2019 Pattern) (Semester - II) (211511)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates:

1) ***Solve Q.1 or Q.2, Q.3 or Q.4.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Assume suitable data if necessary.***
5) ***Use of Logarithmic Table, Slide rule is Electronic pocket calculator is allowed.***

Q1) a) Define straightness. Explain with neat sketch method of checking straightness by wedge method. **[9]**

b) Differentiate between line standard & End Standard. **[6]**

OR

Q2) a) Differentiate between Systematic & Random Error. **[6]**

b) Explain with neat sketch Pneumatic Comparator. **[9]**

Q3) a) Write short note on selective assembly. **[5]**

b) A 25 mm H8f7 fit is to be checked. The limits of size for H8 hole are high limit = 25.03 mm & low limit equal to basic size. The limits of size for f7 shaft are high limit = 24.97 mm & low limit = 24.95 mm. Taking gauge maker tolerance to be 10% of work tolerance, design a plug gauge and gap gauge to check the fit. **[10]**

OR

Q4) a) Design a plug gauge for checking the hole 70 H8 Use $i = 0.45 \sqrt[3]{D} + 0.001D$. IT8 = 25i, Diameter step 50 to 80 mm. **[10]**

b) Sketch & interpret the meaning of various interference fringe patterns observe using optical flats. **[5]**

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