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Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (Automation &amp; Robotics) (2018 Batch) (Sem.-4)

**MANUFACTURING TECHNOLOGY**

Subject Code : BTAR-402-18

M.Code : 77598

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A****Write briefly :**

- Q1. Define Critical Activity and Critical Path.
- Q2. What are the assumptions in formulating a linear programming problem?
- Q3. Define the term "*Economic Order Quantity*".
- Q4. Time series forecasting.
- Q5. Safety stock and Re-order point in the context of inventory control.
- Q6. What are Angle Gauges? How are they used?
- Q7. 3-2-1 principle of Jig and Fixture design.
- Q8. Selective assembly.
- Q9. Difference between unilateral tolerance and bilateral tolerance.
- Q10. Press tool materials.

**SECTION-B**

Q11. Explain in detail how a Sine bar is used for angle measurement.

Q12. Differentiate between clearance, transition and interference fit.

Q13. Explain the classification of comparators.

Q14. The following data gives the sales of the company for various years. Fit the straight line. Forecast the sales for the year 2018 and 2019.

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017
Sales ('000)	13	20	20	28	30	32	33	38	43

Q15. Write differences between PERT Network & CPM Network. What is a critical Path? State the necessary and sufficient conditions of critical path.

**SECTION-C**

Q16. Solve the following transportation problem :

<b>Warehouses</b> <b>Factories</b>	<b>W<sub>1</sub></b>	<b>W<sub>2</sub></b>	<b>W<sub>3</sub></b>	<b>W<sub>4</sub></b>	<b>Capacity</b>
<b>F1</b>	19	30	50	10	7
<b>F2</b>	70	30	40	60	9
<b>F3</b>	40	8	70	20	18
<b>Requirement</b>	5	8	7	14	34

Q17. Derive an expression for the economic order quantity when the stock replenishment is instantaneous giving the assumptions made.

Q18. Write a short note on the following :

- a) Material handling devices
- b) Process planning

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**