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Total No. of Questions – [2] Total No. of Printed Pages: 01

G.R. No.	

OCTOBER 2018 / IN - SEM (T2)

F. Y. M. TECH. (DESIGN ENGINEERING) (SEMESTER - I)

COURSE NAME: DESIGN FOR MANUFACTURING AND ASSEMBLY

COURSE CODE: MEPA11183B

(PATTERN 2018)

Time: [30 minutes] [Max. Marks: 10]

(*) Instructions to candidates:

1) **Answer Q.1 OR Q.2**
2) **Figures to the right indicate full marks.**
3) **Use of scientific calculator is allowed**
4) **Use suitable data where ever required**

Q.1) A cemented carbide tool is turning an alloy steel rod of diameter 50 mm and length 150 mm at a depth of cut of 3 mm and a feed of 0.4 mm/rev. The tool life equation is $VT^{0.2} = 200$, where V is in m/min and T is in min. The tool changing time is 1 min and the time for loading and unloading of workpiece as well as advance and withdrawal of tool is 1 min. Initial set-up and idle time need not be considered. The tool regrinding cost is 3.0 units of cost and a new tool costs 100 units of cost. Tools can be reground a total of 10 times. Labour, overhead and depreciation is 15 units of cost per hour. What is the minimum cost per piece and the maximum production rate? [10 marks]

OR

Q.2 For the same above mentioned problem, what will be (i) the cost per piece at the maximum production rate and (ii) production rate at minimum cost? [10 marks]