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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2017

Program:	B tech MSNT	Semester –	VII
Subject (Course):	Advance manufacturing systems	Max. Marks	: 100
Course Code :	MTEG 441	Duration	: 3 Hrs.
No. of page/s:	02		

SECTION A

Answer the following questions (4*5)

1. 'A dielectric is used in EDM whereas an electrolyte is used in ECM'. Justify. (CO2)
2. Enumerate the various facets of flexibility in relation to FMS.(CO4)
3. Highlight the advantages of using electron beam welding over arc welding? CO1)
4. Compare the differences between process and product layout. (CO4)

SECTION B

Answer the following questions (4*10)

5. Justify the industrial application of AFM and show using a line sketch, the material removal mechanism of the process. (CO3)
6. Contrast on the significance and importance of G00, G01, G02 and G03 codes with appropriate example during CNC operation.(CO5)
7. With example, brief about the tool path, cutting and plotting motion of CNC machines.(CO5)
8. Mention the significance of each notation of the following instruction:

N3 G2 X+1.4 Y+1.4 Z+1.4 I1.4 J1.4 K1.4 F3.2 S4 T4 M2

OR

Enlighten the important technical factors that should be considered in the choice of material handling equipment? Briefly discuss any one factor. (CO4)

SECTION C

Answer the following questions (2*20)

9. Focus and discuss the major components of the robots with their function. Classify the robot manipulators. Justify the major applications of Robotic material handling in automation with example. (CO5)

10. (i) How the principal groups of material handling equipment are classified? State and briefly discuss the essential characteristics of each group.
(ii) Describe the principle of operation of AGV with an example of industrial application.

OR

Discuss the following with examples (i) Lean manufacturing and Agility (ii) Flexible manufacturing system (iii) significance of part codification /part families in AS/AR system.
(CO4)

