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BIMEE-009

B.Tech. – VIEP – MECHANICAL ENGINEERING (BTMEVI)

Term-End Examination

00436

June, 2015

BIMEE-009 : COMPUTER AIDED MANUFACTURING

Time : 3 hours *Maximum Marks : 70*

Note : *Answer any **five** questions. All questions carry equal marks. Standard symbols have usual meanings.*

1. (a) Describe the importance and needs for automation in any industry.

(b) Define CAM. Describe its various components. 7+7

2. (a) What is the function of drives ? Elaborate different drives used for NC machine tools.

(b) NC technology can be applied to a wide variety of operations. Discuss. 7+7

3. (a) How does MCU handle the data read from the tape ? Explain the functioning of DPU and CLU.

(b) What are the most commonly used NC part programming languages ? Explain the APT language with a suitable example. 7+7

4. (a) Explain the concept of contour cutting NC/continuous path NC.

(b) Describe the construction of a stepper motor. Comment on its robustness and life. *7+7*

5. (a) Why are the adaptive control systems easier to be installed on NC machines ? What are the benefits of adaptive control ?

(b) Enumerate the advantages and disadvantages of open loop and closed loop NC systems. *7+7*

6. (a) What is Computer Integrated Manufacturing (CIM) ? Describe its various elements.

(b) Explain, under what prevailing conditions should FMS be adopted. *7+7*

7. Discuss the various robot configurations. *14*

8. Write short notes on the following : $4 \times 3\frac{1}{2} = 14$

(a) Material Handling Systems in Automated Environment

(b) Digital Differential Integrator

(c) Computer Aided Inspection

(d) Robot Application
