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BIMEE-009

00690

B.Tech. MECHANICAL ENGINEERING (BTMEVI)

Term-End Examination

June, 2013

BIMEE-009 : COMPUTER AIDED MANUFACTURING

Time : 3 hours *Maximum Marks : 70*

Note : *Answer **any five** questions.*

1. (a) Explain the organisation of automated manufacturing system with neat sketch. 7

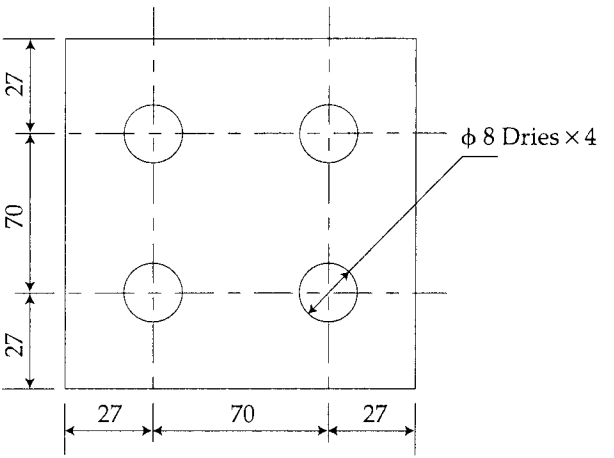
   (b) What are the advantages and disadvantages of computer aided manufacturing over the conventional manufacturing ? 7

2. (a) What are the reasons that lead to the development of numerical control ? How the accuracy of machining can be improved in the NC system ? 7

   (b) How are the NC machine tools classified ? Mention three important applications of NC-Machine tools in manufacturing. 7

3. (a) Identify the drawbacks of manual part programming. Do you feel that these draw backs are removed by computer assisted part programming ? Explain. 7

(b) Write the part programming for the machining operation given in the figure by using G-codes and M-codes. 7



(ALL DIMENSIONS ARE IN MM)

4. (a) What is the purpose of feed back ? What purpose do translator, computers and interpolators serve in numerical control system ? 7

(b) What is adaptive control system ? Discuss its applications. Mention its advantages to the manufacturing technology. 7

5. (a) What is the Group Technology concept in manufacturing ? Discuss the stages in GT planning. 7

(b) Discuss the CIM concept and its relevance in today's industrial competitiveness. 7

6. (a) What type of data are required for developing a CAPP system ? List its advantages. 7

(b) How do you implement the CAD/CAM in job shop industries ? Discuss. 7

7. (a) Write a descriptive notes on "Basic robot motions". How these motions are provided to a robot ? 7+7

(b) What is computer Aided Inspection ? How can it be implemented in manufacturing industries ?

8. Write short notes on the following : $3\frac{1}{2}x4=14$

(a) Artificial Intelligence

(b) DDA Software Interpolator

(c) Mechatronics system

(d) APT Programming