No. of Printed Pages : 4

BME-055

DIPLOMA IN MECHANICAL ENGINEERING (DME)

Term-End Examination

00713

June, 2018

BME-055 : COMPUTER INTEGRATED MANUFACTURING

Time : 2 hours *Maximum Marks : 70*

Note : *Question no. 1 is **compulsory**. Attempt **four** questions from the remaining. All questions carry equal marks. Use of scientific calculator is permitted.*

1. Choose the correct answer from the given four alternatives : *7×2=14*

(a) Robots consist of three basic components : Power supply, control (memory) console, and

(i) micro-computer

(ii) coaxial cable

(iii) mechanical unit arm

(iv) software

(b) Flexible manufacturing allows for

(i) quick and inexpensive product changes

(ii) tool design and tool production

(iii) factory management

(iv) automated design

(c) In computer, ALU is a part of

(i) software

(ii) logic

(iii) CPU

(iv) input/output

(d) The difference between CAD and CAM is that CAD software is directed at product design while CAM software is

(i) concerned with production and control of tool design

(ii) concerned with management programs

(iii) specifically for PC board design

(iv) designed for communications

(e) A robotic instrument is prevented from running into other objects by

(i) sensory devices

(ii) negative image

(iii) bubble memory

(iv) pixel

(f) Networking is

(i) interconnections of PCs

(ii) linking of PCs with communication systems

(iii) running of two or more programs simultaneously

(iv) feeding two or more data simultaneously for single output

(g) The integration of CAD and CAM is

(i) CIM

(ii) Computer Aided Inspection

(iii) Computer Aided Design

(iv) Computer Aided Engineering

2. (a) Discuss an automated inspection system. Why has inspection become an essential part of any manufacturing system ?

(b) Explain how robots are hazardous in manufacturing industry. 7+7

3. (a) What is scheduling ? How is scheduling different from sequencing ? Explain with the help of suitable examples.

(b) Describe the advantages of FMS over Conventional Manufacturing Systems. 7+7

4. (a) State the reasons for the commercial and technological importance of industrial robots. What are the basic movements required for the desired motion of an industrial robot ?

(b) What do you mean be CAD, CAD/CAM and CIM ? What are the different types of CAM applications ? 7+7

5. (a) How can the production system be classified according to quality and variety of product ?

(b) Define mix flexibility. In order to be flexible, what capabilities must a manufacturing system possess ? 7+7

6. (a) Describe standard dispatching rules with the help of suitable example.

(b) Write short notes on any ***two*** of the following : 7+7

(i) e-Manufacturing

(ii) Just In Time (JIT)

(iii) Production Planning and Control (PPC)

(iv) Feedback Control System

7. Processing times (including set-up times) and the due dates for five jobs waiting to be processed at a work centre are given in the following table :

Job	Processing Time (Days)	Due Dates (Days)
A	12	15
B	6	24
C	14	20
D	3	8
E	7	6

Determine the sequence of jobs, the average flow time and average job lateness at the work centre for Earliest Due Date (EDD) rules. *14*