REG.NO:…… MODEL QUESTION PAPER 1

NAME:……..

Eighth Semester B.Tech. Degree Examination, April 2017

(2013 Scheme)

Branch: MECHANICAL ENGINEERING

13.806.5 FLEXIBLE MANUFATURING METHODS

Time: 3 Hours **Marks: 100**

Part A

*(Answer **all** questions; each carries **2** marks)*

1. Explain mini/micro computers.
2. Briefly describe the types of storage devices used in computers.
3. Explain various parts of programmable controllers.
4. Explain the various statements used in APT
5. Write a short note on Group Technology?
6. What is meant by Flexible Manufacturing System.
7. What is AS/RS?
8. Explain the methods of Robotic programming.
9. Explain functions of area controller.
10. Explain artificial intelligence.

(10 X 2 = 20 Marks)

Part B

(Answer any one question from each module. Each question carries 20 marks)

11.(a) Explain the various applications of computers in an engineering design process.

(b) Describe motion control system of NC.

(OR)

12.(a) Explain in detail various CAD packages available.

(b)Explain computer aided design process.

13.(a) Differentiate between G code and M code.

(b)Explain punched tape, tape coding and format.

(OR)

14. (a)Discuss about NC programming with interactive graphics.

(b)Differentiate between manual part programming and computer assisted part programming.

15. (a) Explain various FMS layouts

(b) How part number assist traceability of parts, in group technology?

(OR)

16.(a) Discuss the role of AGV in industries

(b)Write short notes on (i) machining centres (ii) head indexers.

17.(a) Describe various steps to plan and implement FMS.

(b) Discuss about FMS tool management..

(OR)

18.(a) Explain network simulation in FMS..

(b) What are the various approaches to modelling for FMS ?

(4x20=80 Marks)

REG.NO:…… MODEL QUESTION PAPER 2

NAME:……..

Seventh Semester B.Tech. Degree Examination, Septemper 2016

(2013 Scheme)

Branch: MECHANICAL ENGINEERING

08.702 MECHATRONICS

Time: 3 Hours **Marks: 100**

Part A

*(Answer **all** questions; each carries **2** marks)*

1. Explain the working of an inductive proximity sensor.
2. Write short notes on acoustic emission principle and its advantages.
3. Define MEMS. List their advantages.
4. What is meant by cylinder sequencing?
5. What is the need for adaptive control.
6. Draw the PLC ladder diagram for an AND gate.
7. Explain the terms hydraulic resistance and hydraulic capacitance?
8. Explain the working of Tactile sensor.
9. Explain connectivity method in image processing.
10. Name the sensors used in a car engine management system.

(10 X 2 = 20 Marks)

Part B

(Answer any one question from each module. Each question carries 20 marks)

11.(a) Explain any three sensors used for temperature measurement.

(b) Explain the principle and operation of optical encoders.

(OR)

12.(a)Explain the construction and working of an LVDT. How can it be made to measure force?

(b) Explain the velocity sensor with suitable diagram.

13.(a) Compare wet and dry etching process. List down the advantages of MEMS.

(b)Explain the application of various types of actuators.

(OR)

14.(a)Write short notes on Bulk manufacturing and surface manufacturing.

(b) How is sequencing done in a pneumatic system?

15. (a) Discuss the factors to be considered in the selection of bearings for modern machine tools.

(b) Explain the different adaptive control methodologies.

(OR)

16.(a) Explain the different types of NC controls.

(b) Explain the mathematical model for a thermal system under conductive heat transfer.

17.(a) Explain different types of stepper motors used in mechatronics system.

(b) With the help of neat sketch explain the working of CCD cameras.

(OR)

18. Explain in detail with block diagram the engine management system and associated sensors.

(4x20=80 Marks)

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