M.Tech. Mechanical 2015 I to III

VAINGANGA – I (2015 COURSE) (CBCS): Winter- 2016
SUBJECT : COMPUTER AIDED DESIGN

Day : Tuesday
Date : 13-12-2016

Time : 11.00 A.M. To 2.00 P.M.
Max. Marks : 60

N.B.:
1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the sections should be written in **SEPARATE** answer books.

SECTION – I

Q.1 Discuss the CAD/CAM tools based on their constituents and implementation in a design environment. **[10]**

OR

What recommendation may be useful for the user to use CAD/CAM software efficiently?

Q.2 Explain with neat sketches the parametric representation of surface of revolution. **[10]**

OR

Explain with neat sketches the parametric representation of a ruled surface and tabulated surface.

Q.3 Describe the parametric representation of Bezier surface and B-spline surface. **[10]**

OR

What are the various features used for surface manipulations?

SECTION – II

Q.4 List various approaches used for creating solid models. Explain in detail: **[10]**
a) Parametric (analytical) solid modeling
b) Primitive instancing

OR

Explain in detail the evolution of data exchange formats.

Q.5 How the design by feature concept is applied in manufacturing industry? **[10]**

OR

Explain briefly the concept of behavioral modeling used in CAD.

Q.6 Explain in brief the implementation of Product data management in manufacturing industry. **[10]**

OR

How the collaborative design concept is applied in manufacturing industry?

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VAINGANGA- I (CBCS- 2015 COURSE): Winter – 2016
SUBJECT: MODELING & SIMULATION

Day: Thursday
Date: 15-12-2016

Time: 11.00 A.M. To 2.00 P.M.
Max Marks:60

N.B:

1) All questions are **COMPULSORY.**
2) Figures to the right indicate **FULL** marks.
3) Use of non- programmable **CALCULATOR** is allowed.
4) Assume suitable data if **WHENEVER** necessary.

Q.1 Explain different types of models. **(10)**

OR

Q.1 Explain advantages & limitation of simulation. **(10)**

Q.2 In the bombing problem, the ammunition depot area is a circle of 500 m radius. The point of impact is normally distributed around the aiming point with standard division of 500 m in X- direction & 300 an in Y direction . Simulation the bombing operation for 40 strikes & find the percentage of strikes on target. **(10)**

OR

Q.2 Write a matlab code to evaluation **(10)**

$\int_a^b f(x)\,dx$ by monte carto simulation.

Q.3 According to a study conducted by a telephone company, the probability is 25% that a randomly selected phone call will last longer than the mean value of 3.8 minutes. What is the probability that out of three randomly selected calls. **(10)**

a) Exactly two last longer than 3.8 minutes?
b) None last longer than 3.8 minutes?

OR

Q.3 A lake popular among boat fishermen has an average catch of three fish every two hours during the month of October. **(10)**

1. What is the probability distribution for x. the number of fish that you will catch . in 7 hours?
2. What is the probability that you will catch 0.3 or 10 fish in 7 hours of fishing?
3. What is the probability that will catch 1 or more fish in 7 hours?

Q.4 Explain exponential growth model. **(10)**

OR

Q.4 Write a matlab code for simulation of simple pendulum. **(10)**

P.T.O

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VAINGANGA – I (2015 COURSE) (CBCS): Winter-2016
SUBJECT : COMPUTER INTEGRATED MANUFACTURING

Day : Saturday
Date : 17-12-2016

Time : 11.00 A.M. To 2.00 P.M.
Max. Marks : 60

N.B.:

1) All questions are **COMPULSORY**.
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SECTION - I

Q.1 Describe the three step process of Computer Integrated Manufacturing implementation. **[10]**

OR

How the production strategies, 'make to order' and 'assemble to order' affect the Computer Integrated Manufacturing implementation?

Q.2 What are different product data management techniques? State the advantages and limitations of each. **[10]**

OR

Discuss the concept of collaborative engineering.

Q.3 Compare and contrast flexible manufacturing cells with flexible manufacturing systems. **[10]**

OR

Describe the five technology levels that may be present in FMS.

SECTION - II

Q.4 Compare and contrast open loop MRP, closed loop MRP and MRP II. **[10]**

OR

Describe two cards Kanban system.

Q.5 Elaborate the problems faced in integration of information systems. **[10]**

OR

Discuss the factors affecting the decision to implementation of ERP system.

Q.6 What are the merits and demerits of pull production system and push production system? **[10]**

OR

Write a detailed note on 'Agile Manufacturing'.

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VAINGANGA -I (CBCS- 2015 COURSE): Winter- 2016
SUBJECT: PRODUCT DESIGN & DEVELOPMENT

Day: Tuesday
Date: 20.12.2016

Time: 11.00 A.M. TO 2.00 P.M.
Max. Marks: 60

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SECTION-I

Q.1 What are the different challenges of product development? **(10)**

OR

Q.1 Explain design and development of product with suitable example. **(10)**

Q.2 Write short note on Identifying Customer need. **(10)**

OR

Q.2 Explain the relative importance of the needs and reflect on the results and process. **(10)**

Q.3 How customer response is measured and discuss survey format. **(10)**

OR

Q.3 Explain the terms search externally and search internally. **(10)**

SECTION-II

Q.4 Explain the considerations for supply chain and variety. **(10)**

OR

Q.4 What is platform planning? Discuss in details. **(10)**

Q.5 What are the basics prototyping? Explain technologies for prototyping. **(10)**

OR

Q.5 Define design for manufacturing. Explain estimation of manufacturing cost. **(10)**

Q.6 What is base line project planning and project execution **(10)**

OR

Q.6 State and explain different elements of economic analysis. **(10)**

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