

Date: 21/12/2016

Student Exam No: \_\_\_\_\_

GANPAT UNIVERSITY

M. TECH SEM - I [CAD/CAM & AMS] REGULAR EXAMINATION NOV-DEC 2016

3ME106 – COMPUTER AIDED PROCESS PLANNING

Time: 3 Hours

Total Marks: 60

Instructions: 1) This Question paper has two sections. Attempt each section in separate answer book.

2) Figures on right indicate marks.

3) Be precise and to the point in answering the descriptive questions.

SECTION – I

Que:-1 [A] What is the importance of sales forecasting? Explain the method of least squares. [03]

[B] A company use simple to forecast weekly demand and has collected the past data for 15 weeks as shown below [04]

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Actual demand	32	33	25	20	12	13	18	17	32	33	28	12	35	15	28

Compute the forecast value for 16<sup>th</sup> week using

(1) Unweighted four month moving average,

(2) Exponential smoothing with smoothing constant =0.2, simple moving average may be used for determining forecast of 15<sup>th</sup> week.

[C] Explain weighted moving average method with an example. [03]

OR

Que:-1 [A] What is the need of CAPP? What are its advantages? [03]

[B] Explain collective opinion method for forecasting. [03]

[C] Define the term inspection? What are contact type and non-contact type inspection techniques, explain with suitable examples. [04]

Que:-2 [A] Distinguish between aggregate planning and master production scheduling. [03]

[B] State the planning for CAPP system and also explain the various approaches to process planning [03]

[C] "A process engineer needs to consider a number of factors while laying down the manufacturing process of a job" what are those factors? And how do they influence process planning? [04]

OR

- Que:-2** [A] Discuss the generative process planning with its advantages and limitation. [03]  
 [B] List out Different process planning system and explain any two of them. [03]  
 [C] Define the term "BOM". Explain various characteristics of BOM in details. [04]

- Que:-3** [A] Explain types of forecasting methods. [02]  
 [B] Sales data of a product related to economic index for past 10 years is given below [05]

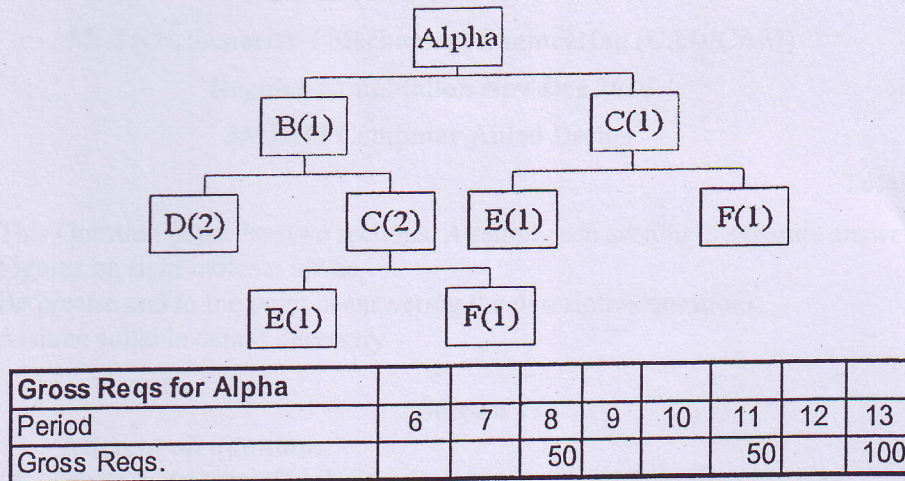
Year	Economic Index	Sales 10000 units
1	111	2.1
2	161	2.8
3	143	2.6
4	170	2.0
5	126	2.5
6	100	2.6
7	129	2.4
8	104	2.3
9	152	2.3
10	115	3.0

- (1) Determine the equation of the least squares line that describes the relationship between sales and the economic indicator.  
 (2) Determine the strength of the relationship between the two variables by computing the value of coefficient of correlation.  
 (3) If the value of economic index for the 11<sup>th</sup> year is 175, find out the sales in 11<sup>th</sup> year.
- [C] Define Master Production Scheduling. Explain the factors that need to be taken into account while developing master production schedule [03]

### SECTION – II

- Que:-4** [A] What is independent and dependent demand? Differentiate between them by taking example. [05]  
 [B] Complete the material requirements plan for an item Alpha as shown below. [05]

Item	Lead Time	Current Inv. Pos.
Alpha	1	10
B	2	20
C	3	0
D	1	100
E	1	10
F	1	50



OR

Que:-4 [A] What are the reasons for growth of ERP market? [05]

[B] An end item X is composed of two B's and one C. moreover, each B requires three D's and one E, and each D requires four E's. Similarly, each C is made up of two E's and two F's. The items at each level are components of the next level up and, as in a family tree, are parents of their respective components. The available inventory on hand of each items B, C, D, and E are 4, 10, 8, and 60 respectively. Note that the quantities of each item in the product structure tree refer only to the amounts needed to complete the assembly at the next higher level. Use this information to do the following:  
 (a) Draw the product tree diagram  
 (b) Determine the quantities of B, C, D, E, and F needed to assemble one unit of X.  
 (c) Determine the quantities of these components that will required to assemble 10 Xs, taking into account the quantities on hand of various components.

Que:-5 [A] Explain briefly KANBAN system. List types of KANBAN system and explain them. [03]

[B] Define ERP. Explain the various phases of ERP implementation. [03]

[C] Explain following term [04]  
 (a) Online inspection, (b) Offline inspection, (c) In – process inspection,  
 (d) Post- Process inspection

OR

Que:-5 [A] What is ERP? Discuss its benefits in large scale industry. [03]

[B] Explain JIT philosophy and the role of TQC and people involvement in JIT system. [04]

[C] Discuss the integration of CAD database and CMM operation. [03]

Que:-6 [A] List out the application of group technology. [03]

[B] Differentiate between Material Requirement Planning (MRP) and Manufacturing Resource Planning (MRP II) [04]

[C] Comparison between JIT and MRP. Explain Reengineering. [03]

-----END OF PAPER-----