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Total No. of Printed Pages: 3

Enrollment No.....



Faculty of Engineering

End Sem (Even) Examination May-2019

ME3EI03 Production Planning and Control

Programme: B.Tech.

Branch/Specialisation: ME

Duration: 3 Hrs.

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. A good planning system must consider: 1
(a) What are we going to make?
(b) What does it take to make it?
(c) What do we have and need?
(d) All of these
- ii. _____ is responsible for analyzing the marketplace and deciding 1
the firm's response, the markets to be served, the products supplied,
and desired levels of customer service.
(a) Marketing (b) Finance (c) Production (d) Engineering
- iii. Product layout is employed for 1
(a) Batch production
(b) Continuous production
(c) Effective utilization of machine
(d) All of these
- iv. The process layout is best suited where 1
(a) Specialization exists
(b) Machines are arranged according to sequence of operation
(c) Few numbers of non-standardized units are to be produced
(d) Mass production is envisaged
- v. Which of the following is independent of sales forecast? 1
(a) Productivity (b) Inventory Control
(c) Production Planning (d) Production Control
- vi. Forecasting is function of _____. 1
(a) Marketing department (b) Production Department
(c) Finance Department (d) None of these

P.T.O.

[2]			[3]
vii.	Gantt Charts are used for (a) Forecasting Sales (b) Production Schedule (c) Scheduling and Routing (d) Linear Programming	1	OR iii. Forecast the demand for the week of February 15, continue forecasting through March 15, assuming that subsequent demands were actually 516, 488, 467, 554 and 510 units.
viii.	The Production Scheduling is simpler and high volume of output and high labour efficiency are achieved in the case of (a) Product layout (b) Process Layout (c) Fixed Position Layout (d) A combination of line and process Layout	1	OR iii. List out the advantages and disadvantages of short term long term forecasting.
ix.	Work Study is concerned with (a) Improving present method and finding standard time (b) Motivation of workers (c) Motivation of workers (d) Improving production planning and control	1	Q.5 i. Briefly explain Gantt Chart. ii. "The Production Planning Control function 'dispatching'" is often misunderstood." Explain the correct meaning and duties of the dispatching function.
x.	Basic Tool in Work Study is (a) Graph paper (b) Process chart (c) Planning chart (d) Stop Watch	1	OR iii. Explain Flow production scheduling and Batch production scheduling in brief.
Q.2	i. Define production planning and control. ii. List the objectives of production planning and control. iii. Explain different types of production system and their characteristics.	2	Q.6 i. Attempt any two: List the objectives of work study and method study.
OR	iv. Discuss various considerations of product design and development.	5	ii. Describe micro motion study. Give suitable examples of its application.
Q.3	i. Define process planning. ii. Explain various types of process design.	2	iii. Describe procedure of Time Study using stop-watch method.
OR	iii. Explain break event analysis in detail and describe its significance.	8	*****
Q.4	i. Describe Delphi Technique in brief. ii. A firm uses simple exponential smoothing with $\alpha = 0.1$ to forecast demand. The forecast for the week of February 1 was 500 units, whereas actual demand turned out to be 450 units. (a) Forecast the demand for the week of February 8. (b) Assume that the actual demand during the week of February 8 turned out to be 505 units.	3	7

Marking Scheme

ME3EIO3 PRODUCTION PLANNING AND CONTROL

MCQ

Q.1. A good Planning System must Consider :

(d) All of these.

Q.2 _____ is responsible for analyzing the market place & deciding the firm's response, the markets to be served, the products supplied & desired levels of customer service.

(a) marketing

Q.3 Product layout is employed for

(b) Continuous Production

Q.4 The process layout is best suited for where

(c) Few numbers of non-standardized units are to be produced.

Q.5 Which of the following is independent of Sales forecast ?

(a) Productivity

Q.6 Forecasting is function of

(a) marketing department

Q.7 Gantt charts are used for

(b) Production
(c) Scheduling and Routing

Q.8 The production scheduling is simpler & high volume of output and high labour efficiency are achieved in the case of

(a) Product layout

Q.9 Work Study is concerned with

(a) Improving Present method & finding Standard

Q.10) Basic tool in work study is
 (d) Stop watch

SOM

Q.2 Define & explain production planning.

i) Define Production planning & control.

Definition — 2 marks

ii) List the objectives of production planning & control

Six objectives — 0.5 marks each

iii) Explain different types of production system
 & their characteristics. — 0.5 marks

Explanation of Any three types of production system &
 their characteristics — 0.5 marks

iv) Discuss various considerations of product
 design & development. — 0.5 marks

Explanation of five considerations of product
 design & development — 0.1 marks each

Q.3

i) Define process planning.

Definition — 2 marks

March 15, assuming that subsequent

demands were actually 516, 488, 467

and 554 of 510 units

$$\text{Sol: } (a) F_t = F_{t-1} + \alpha (D_{t-1} - F_{t-1})$$

$$= 500 + 0.1 (450 - 500)$$

$$= 500 - 5$$

= 495 units — 02 marks

(b)

Week	Demand	Old Forecast	Forecast Correction	New Forecast
Week 1	450	500	-50	495
Week 2	505	495	+10	496
Week 3	516	496	+20	498
Week 4	488	498	-10	497
Week 5	467	497	-30	494
Week 6	554	494	+60	500
Week 7	510	500	+10	501

forecasts based up to week 22 — 05 marks

8 forecasts of new with given

estimating of two factors

iii) Explain various types of process design.

Definition of framework for process design

02 marks

06 marks

— 08 marks

OR

iii) Explain break even Analysis in detail & describe

(06) Its significance?

Explanation of break even analysis — 04 marks

Diagram of break even Analysis — 02 marks

Its significance — 02 marks

Q.4.

i) Describe Delphi Technique in brief.

Description of Delphi Technique

— 03 marks

ii) A firm uses Simple Exponential Smoothing with $\alpha = 0.1$ to forecast demand. The forecast for the week of February 1 was 500 units whereas actual demand turned out to be 450 units.

a) Forecast the demand for the week of February 8.

b) Assume that the actual demand during the week of February 8 turned out to be 505 units.

Forecast the demand for the week of February 15 continue forecasting through

OR.

- iii) List out the advantage & disadvantage of short term long term forecasting

Advantages of short term long term forecasting — 3.5 marks

Disadvantage of short term long term forecasting — 3.5 marks

Advantages of short term long term forecasting

short term forecasting is more reliable

short term forecasting is more reliable

short term forecasting is more reliable

disadvantages of short term long term forecasting

out put planning (2.0)

functions of short term long term forecasting

functions of short term long term forecasting

less input → less output of products

less input → short delivery of products

Q.5.

to i) Briefly explain Gantt chart

~~purposes of most plan most tools~~

Definition — 2 marks

Gantt chart Diagram — 2 marks

~~purposes 2-E — purposes~~

ii) The Production Planning Control function

~~dispensing~~ often misunderstoodExplain the correct meaning & duties of
the dispatching function.

Definition of dispatching — 02 marks

Eight duties of dispatching — 0.5 marks each

OR

iii) Explain flow production scheduling

Batch production scheduling in brief

Explanation about

flow production scheduling — 03 marks

Batch production scheduling — 03 marks

Q.6)

Attempt any two

i) List the objectives of work study & method
study,

five objectives of work study — 0.5 mark each

five objectives of method study — 0.5 mark each

ii) Describe micro motion study Give Suitable examples of Its application.

Description of micro motion study - 03 marks
Two suitable examples of Its application

— 01 mark
each

iii) Describe procedure of Time Study using stop watch method.

Procedure of time study

Any five steps — 01 mark each