

JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination (Regular special), Jan 2016

B. Tech in Mechanical Engineering, Semester V

Roll No.....

COURSE CODE: ME-505:Production Planning & Control

Time: 3 hours

Max. Marks: 100

Instructions to students:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever required and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.

Q.1A Objective type questions (10 questions @ 1 mark)

10

1. If EOQ = 360 units, order costs are Rs 5 per order, and carrying costs are Rs 0.20 per unit, what is the usage in units?
a. 129500 units
b. 2592 units
c. 25920 units
d. 18720 units
2. A SIMO chart should be used with
(a)Process chart (b)Flow diagram
(c)Man machine operation charts (d)therbligs
3. Raw Materials and WIP can be classified under
a. Indirect Material
b. Direct Material
c. Finished Material
d. Standard Parts
4. Which of the following layouts is best suited for mass production?
(a)Process layout (b)product layout
(c)fixed position layout (d)none of these
5. At breakeven point
a. Total expenses = Total revenue (b)Total expenses > Total revenue
(c)Total expenses < Total revenue (d)Any of the above
6. Which one of the following is required for the preparation of the load chart machine?
(a)Process chart (b)Sequencing of jobs on the machine
(c)Route sheet of jobs (d) Schedule of jobs for the machines.
7. PMTS can be defined as.....
8. State need for product planning
9. Symbol used for the storage in delay

10. Explain the term buffer.

Q.2 Short answer type questions (All carry equal marks) 10
(A) Define the standard time.
(B) Differentiate between relaxation allowance and contingency allowance
(C) Write short note JIT.
(d) Define Normal time.

Q.3A Define BEP with diagram also derive the expression for BEP. 05

Q.3B How is the concept behind ABC classification useful for managing a manger time? Explain 05

Q.4A A time study was conducted on a job consisting of three elements. Stop watch readings in hundredth of a minute are given. Using cumulative timing method along rating factors. Calculate the standard time if allowance is 12%. 05

Element						Rating
	1	2	3	4	5	
A	10	73	139	203	266	80
B	25	88	155	218	280	100
C	64	128	193	257	320	110

Q.4B Differentiate the product and process layout in detail. 05

Q.5A Distinguish between Job Shop production and mass production. 05

Q.5B A time study was conducted on a job consisting of three elements. Stop watch readings in hundredth of a minute are given. Using cumulative timing method along rating factors. Calculate the standard time if allowance is 12%. 05

Element						Rating
	1	2	3	4	5	
A	10	73	139	203	266	80
B	25	88	155	218	280	100
C	64	128	193	257	320	110

Q.6A Derive the expression for Economic Order Quantity when stock Replenishment is non- instantaneous. With diagram. 05

Q.6B What is PPC? Explain objectives and benefits of PPC. 05

OR

Q.6B With diagram discuss Kanban production information system. 05

Q.7A ABC company is investing the decision whether to make or buy a plastic packaging, which is currently being purchased at Rs 7 each. The demand estimate is shown below. 05

Demand	20,000	30,000	40,000	50,000	60,000
Chance	10	30	40	15	5

Q.7B Elaborate the term 3s philosophy. 05

OR

Q.7B Does ERP Implementation require organizational preparation? Discuss 05

Q.8A Draw and explain Man Machine chart. And briefly explain Gantt chart 6+4

Q.9A Write short note on MRP 4+6

Demand for the component is at the rate of 6000 per year and this demand is going to continue for the next three years. The company has two options. It can get the component manufactured from the outside or it can manufacture in house. It costs the company Rs 2.8 per unit to buy component. The in house manufacture will incur a fixed cost to the extent of Rs 10,000 and variable cost of Rs. 1.5 per unit.

Q.9B Explain various factors of effecting routine procedure. 10

OR

Q.9B Write short note on MRP II. 4+6

There are seven jobs which are to be processed on two machines M1 and M2 in the order M1 and M2. Processing times are given below

Job	A	B	C	D	E	F	G
Machine 1	6	24	30	12	20	22	18
Machine 2	16	20	20	13	24	2	6