End Term Examination eMEP-07 Batch (Supplementary)
Operations Management

Max. Marks: 40 Time: 2 Hours

Note: (i) Attempt any three question from Section A and any two questions from Section B, (ii) All questions carry equal marks (08 each), (iii) Assume suitably wherever required but don't forget to mention your assumptions in your answer book, (iv) Books, Notes, Mobiles and Laptops are not allowed, (v) calculators are allowed in the examination.

SECTION-A

Q. 1. An end item P is composed of three subassemblies K, L, and W. K is assembled using 3 G and 4 H; L is made of 2 M and 2 N; and W is made of 3 Z. On hand inventories are 20 L, 40 G, and 200 H. Scheduled receipts are 10 K at the start of week 3, 30 K at the start of week 6, and 200 W at the start of week 3. One hundred P will be shipped at the start of week 6, and another 100 at the start of week 7. Lead times are two weeks for the fabrication of subassemblies and one week for the procurement of components G, H, and M. final assembly of P requires one week. Include an extra 10 percent scrap allowance in each planned order of G. The minimum order size for H is 200 units. Develop a material requirement plan for K, G, and H.

Q. 2. Dr. Wu, Operations Manager at NESA Electronics, prides herself on excellent assembly line balancing. She has been told that the firm needs to produce 1400 electric relays per work day. Due to breaks and lunch, there are only 420 working minutes each day. The following table lists the tasks, precedence relationships, and average task time required to produce a relay.

Tasks	Time (Sec)	Must Follow Tasks
A	13	-
B	4	A
C	10	B
D	10	-
E	6	D
F	12	E
G	5	E
H	6	F, G
I	7	H
J	5	H
K	4	I, J
L	15	C, K

(a) Compute the maximum cycle time NESA can have and still produce 400 relays per day

(b) Compute the theoretical minimum number of work stations required.
(c) Construct an assembly line that attempts to minimize the number of work stations while producing at least 1400 units per day
(d) For your solution in part (c) of this question, compute the actual cycle time and the actual production rate that would result, and

Q. 3. (a) What is product life cycle? How it affects the strategic operation decisions?
(b) What is the concept of synchronous manufacturing? Explain the concept of Drum, Buffer, Rope as used in Synchronous Manufacturing.

Q. 4. Write notes on:
(a) JIT Manufacturing
(b) Exponential Smoothening Technique in Forecasting
(c) Outputs of MRP
(d) Relative importance of Quality in JIT, MRP-based Manufacturing, and Synchronous Manufacturing

SECTION-B

Q. 5. (a) How are mean time to failure (MTTF) and reliability defined, in relation to statistical distribution of lifetime of machines, equipment etc.?
(b) Suppose, a machine is built of 5 components. The machine fails if any of these fail. At 5 years, reliability values of the components are 0.99, 0.98, 0.97, 0.96, 0.96. What is the reliability of the machines at that time?

Q. 6. A machine lifetime follows an exponential distribution with average 10 years. That is, probability density function for lifetime is (t measured in years),

$$f(t) = \lambda e^{-\lambda t}, t \geq 0 \ (\lambda = 1/10 \text{ years}).$$

What is its reliability at average lifetime?

Q. 7. Consumption rate of a material at a plant is at a fairly constant rate and is 5000 kg/ month. Ordering cost for it is Rs 9000/order. It is procured at the price of Rs 60/kg. Inventory carrying cost, inclusive of store operations and cost of idle capital is 20% per year. The plant orders, every 3 month, a quantity of 15000 kg. Can there be better inventory control for the material? Lead time of supply is 20 days. The plant operates 7 x 24 hours.

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Interactive Distance Learning Centre
INDIAN INSTITUTE OF MANAGEMENT KOZHIKODE
***e*xecutive Management Education Programme (*e*MEP-07)**
Repeat Examination – August 2008

Managerial Communication

Maximum Marks: 40 **Duration : 2 Hours**

Notes: This is a closed book examination.
Answer all questions.

1. Assume that you must prepare a speech on the importance of getting good grades to an audience of college students. Develop some attention gaining ideas for the introduction of the speech. Do the same for a climatic close for the speech. (16 marks)

2. Read the case carefully and answer the following questions:

   a. What are the real issues concerning the case? (7 marks)

   b. What should organisation do to overcome such problems? (7 marks)

Case

The Ozyx Corporation is a relatively small industrial company located in the outskirts of Mumbai. The president of Ozyx has hired a consultant to help discover the reasons for the poor profit picture of the company in general and the low morale and productivity of the R & D division in particular. During the process of investigation, the consultant becomes interested in a research project in which the company has invested a sizable proportion of its R & D budget.

When asked about the project by the consultant in the privacy of their offices, the president, the vice-president for research, and the research manager each describes it as an idea that looked great on paper but will ultimately fail because of the unavailability of the technology required to make it work. Each of them also acknowledges that continued support of the project will create cash flow problems that will jeopardize the very existence of the total organization.

Furthermore, each individual indicates he has not told the others about his reservations. When asked why, the president says he can't reveal his "true" feelings because abandoning the project, which has been widely publicized, would make the company look bad in the press and, in addition, would probably cause his vice-president's ulcer to kick up or perhaps even cause him to quit, "because he has staked his professional reputation on the project's success."

Similarly, the vice-president for research says he can't let the president or the research manager know of his reservations because the president is so committed to it that " I would probably get fired for insubordination if I questioned the project."

Finally, the research manager says he can't let the president or vice-president know of his doubts about the project because of their extreme commitment to the project's success.

3. Your colleague who is in a key position met with a fatal accident. You have been asked to take over his position with immediate effect.

Write an e-mail communicating your take over:

a) to your client (5 marks)

b) to your friend (5 marks)