what conditions would you recommend scheduling by PERT ?

5. Discuss the role of material handling system in improving the productivity of a company.

6. Explain the principles of Motion Economy.

7. The following information relating to a type of raw material is available :

Annual demand	2,400 units
Unit price	Rs. 2.40
Ordering cost per order	Rs. 4
Stroage Cost	2% per annum
Interest Rate	10% per annum
Lead time	Half month

Calculate Economic Order Quantity and total inventory cost of the particular raw material.

8. Write the dual to the following LP problem :

Maximize $Z = x_1 - x_2 + x_3$

Subject to the constraints

$$X_1 + x_2 + x_3 \leq 10$$
$$2x_1 - x_2 - x_3 \leq 2$$
$$2x_1 - 2x_2 - 3x_3 \leq 6$$

and $X_1, x_2, x_3 \geq 0$

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I on 1st year

2013

Time : 3 hours

Full Marks : 80

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

*Answer any **four** questions in which Q. No. 1 is compulsory.*

1. Write the correct answer of the following :

(a) Operations research approach is :

(i) Multi-disciplinary (ii) Scientific

(iii) Intuitive (iv) All of the above

(b) Linear Programming is a :

(i) Constrained optimization technique

(ii) Technique for economic allocation of limited resources

(iii) Mathematical technique

(iv) All of the above

(c) The graphical method of LP problem uses :

(i) Objective function equation

(ii) Constraint equations

(iii) Linear equations

(iv) All of the above

(d) The GP approach attempts to achieve each objective :

(i) Sequentially (ii) Simultaneously

(iii) Both (i) and (ii) (iv) None of the above

(e) The assignment problem :

(i) Requires that only one activity be assigned to each resource

(ii) Is a special case of transportation problem

(iii) Can be used to maximize resources

(iv) All of the above

(f) Which one of the following is correct formula of re-order level ?

(i) ROL = B + LdR (ii) ROL = B

(iii) None of the above (iv) Both (i) and (ii)

(g) Average inventory will be equal to :

(i) $B + q^*$ (ii) $B + q^*/2$

(iii) B (iv) All of the above

10 – 20 – 100

(h) The method used for solving an assignment problem is called :

(i) Reduced matrix method

(ii) MODI method

(iii) Hungarian method

(iv) None of these

(i) Two person zero sum game means that the :

(i) Sum of losses to one player is equal to the sum of gain to other

(ii) Sum of losses to one player is not equal to the sum of gains to other

(iii) Both (i) and (ii)

(iv) None of the above

(j) Managerial decision are based on :

(i) An evaluation of quantitative data

(ii) The use of qualitative factors

(iii) Numbers produced by formal models

(iv) All of the above

2. Explain the concept of Production Management. What are the duties and responsibilities of Operations Manager ? Explain.

3. Explain ABC analysis. What are its advantages and limitations, if any ?

4. Compare and contract CPM and PERT. Under