

INTERMEDIATE EXAMINATION

June 2016

P-9(OMS)
Syllabus 2012

Operation Management and Information Systems

Time Allowed: 3 Hours

Full Marks: 100

The figures in the margin on the right side indicate full marks.

All questions are compulsory, subject to instruction provided against each question.

All workings must form part of your answer.



Assumptions, if any, must be clearly indicated.

Section A

I. Answer the following questions which are compulsory:

2×10=20

1. Answer *all* the questions:

- Define 'Load Chart'.
- State the disadvantages of 'Vertical Integration'.
- Fill in the blanks with one word or two:
 - The _____ is the sum of the setup time and run time for a batch of parts that are run on a machine.
 - Efficiency is a ratio of the actual output of a process relative to some _____.
- Write the formula for Input Efficiency.
- State whether 'True' or 'False':
 - Regular spares are also called Rotable spares.
 - Role of the corrective maintenance department is almost active.
- Name the activity denoted by the following standard symbols used in Process Charting:
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- 'The characteristics of information vary with functions of levels of management'. Fill in the blanks (i) to (iv) in the following Table with regard to contents of report:

Characteristics of Information	Top Management	Middle Management	Operational Management
Focus of Planning and Management	Strategic Planning	(i)	(ii)
Boundary	(iii)	(iv)	Internal

- Please complete the following sentence by putting in appropriate words in the blank positions:
'Configuration of an ERP system deals with handling of numerous usage controls, which can be switched _____ or switched _____, so as to balance its functionalities to extant needs. First thing to happen is to _____ specific modules needed and _____ these modules, as per the scope of the project.'

Please Turn Over

- (i) List two important responsibilities of Database Administrator in a database environment.
- (j) 'It is often said that we are in the information age, and that information is a valuable commodity.' Explain two areas in a business situation where information can be effectively used.

2. Match List A with List B:

1×5=5

List A	List B
(a) Simulation	(1) Controlling redundancy
(b) Quality Circle	(2) Reliability
(c) Insurance spares	(3) Voluntary group to identify problems
(d) Attribute of information	(4) Model of real phenomenon
(e) Using a DBMS	(5) High reliability and rare requirement

Section B

II. Answer any three questions:

15×3=45

1. (a) A department works on 8 hours per day, 250 days a year and has the usage data of a machine, as given below:

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Product	Annual demand (units)	Processing time (standard time in hours)
X	200	4.0
Y	300	6.0
Z	400	3.0

Determine the number of machines required.

- (b) 'Operations management is responsible for producing goods and / or services.' In this context, define 'Operating System' and state the principal functions of an operating system. 1+4=5
- (c) The equation of the demand curve of a firm is $p = 12 - 0.4q$ and the equation of the total cost curve is $C = 0.6q^2 + 4q + 5$. Determine price, output, total revenue and profit if the objective of the firm is to maximize profit. 4
2. (a) The main shaft of Calcinator has a very high reliability of 0.980. The equipment comes from abroad and has a high downtime cost associated with the failure of this shaft. This is estimated at ₹ 1.80 crores as the costs of sales lost and other relevant costs. However, this spare is quoted at ₹ 10 lakhs at present. Should the shaft spare be procured along with the equipment and kept or not? 4
- (b) Write down the formula for: 1×3=3
- Performance Ratio (as a percentage)
 - Throughput Ratio
 - Frequency of Breakdown
- (c) List the benefits of Benchmarking.

