

Supervisors Signature:

University of Pune  
MBA – Biotech (2<sup>nd</sup> Year)  
**301-Project Management**  
Mid-Sem exam Oct 2011

Seat No.: \_\_\_\_\_

Maximum Marks: 40

Time Allotted: 2 hours

Instructions to the Candidates

1. All Questions are Compulsory
2. Do not use regular answer sheet. Write your answers on the question paper itself
3. Write your seat no. on the question paper without fail

**1. Short Questions on Basic Concepts of Project**

**What category should these Projects be attributed to – Modernization, Expansion, Diversification, Replacement, Balancing, Rehabilitation or combination of the above? Write the classification in the space given below:**

**[5 marks]**

a. Duracare Ltd., a company producing consumer durables has been having severe production constraints due to frequent and long disruption in Power supply. They have their own captive generation which can meet 75% of their capacity. They are considering augmenting their own generation to take care of their entire capacity at an investment of Rs. 60 lakhs.

b. XYZ Ltd. produces blue detergent powder. Recent studies carried out by marketing indicates that there is a growing opportunity for white detergent powder. Producing of detergent powders in two different colours in the same plant requires modification to the existing plant as well as additional facilities for storage and handling. The total investment involved would be Rs. 85 lakhs.

c. Economic Producer Ltd., is an ancillary unit producing components for trucks. Their main machinery was installed 17 years back. This equipment can produce 700 components per day. New equipment available for producing the same component costs Rs. 25 lakhs with a delivery time of three months.

d. Ajit Singh owns 25 hectares of land on which he grows wheat. He is planning to buy a tractor to speeden up his farm operations as well as reduce input costs.

e. Milk Products Ltd. is in dairy business producing milk powder and ghee. Recently a market survey carried out by the consultants appointed by the company indicates an opportunity for selling cheese. The total outlay in terms of capital expenditure would be Rs. 270 lakhs

## 2. Objectives & Numerical on Network Planning (PERT/CPM)

State whether the following statements are TRUE or FALSE in the OMR sheet below only [5 marks]

1. A project is usually a very large, complex, one-time process that consists of many activities.
2. Project Planning includes budgeting and scheduling of activities associated with the project.
3. When the work breakdown structure is completed with the estimates from all parties, it can be used to plan the project.
4. In activity on arrow, the activities are represented by nodes.
5. All activities on the critical path have zero slack.
6. Slack is the difference between latest start and the earliest start times.
7. There can be more than one critical path in a PERT network.
8. A network is constructed by linking the arrows and the nodes as specified by the precedence relationships.
9. Scheduling is defined as the process of converting plans into an operating timetable.
10. An event is a point in time.

### OMR Sheet

- |    |                         |                         |
|----|-------------------------|-------------------------|
| 1  | <input type="radio"/> T | <input type="radio"/> F |
| 2  | <input type="radio"/> T | <input type="radio"/> F |
| 3  | <input type="radio"/> T | <input type="radio"/> F |
| 4  | <input type="radio"/> T | <input type="radio"/> F |
| 5  | <input type="radio"/> T | <input type="radio"/> F |
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| 7  | <input type="radio"/> T | <input type="radio"/> F |
| 8  | <input type="radio"/> T | <input type="radio"/> F |
| 9  | <input type="radio"/> T | <input type="radio"/> F |
| 10 | <input type="radio"/> T | <input type="radio"/> F |

Seat No.:

**Solve the numerical in the space provided below. Preferably use pencils [15 marks]**

A project consists of 8 activities, lettered A through H. below. For each activity, the preceding activity is given, and a probabilistic estimate of the time required completing it. Times are in days.

Activity	Preceding Activity	Optimistic Time	Most Likely Time	Pessimistic Time
A	--	2	4	6
B	A	3	6	9
C	A	2	5	11
D	--	2	10	12
E	C,	4	8	15
F	B,E	2	4	12
G	D	3	4	11
H	F,G	1	1	1

**Draw network diagram for the project [2 marks]**



Calculate ES, EF, LS, LF & expected time and variance for each activity in the space below [4 marks]

Activity	ES	EF	LS	LF	Expected Time	Variance
A						
B						
C						
D						
E						
F						
G						
H						

List all the paths in the table below along with their duration and variance [4 marks]

Path	Duration	Variance
A		
B		
C		
D		

Determine critical path and project duration [2 marks]

Critical Path: \_\_\_\_\_ Project Duration: \_\_\_\_\_

Due to earthquake the project was started late by 3 days. Management was faced with the problem of how to make up the lost time, and how much it would cost. Estimates of crash times and costs for each activity are given below.

Activity	Crash Time	Cost per Day
A	Not possible	-
B	3 days	200 per day
C	not possible	-
D	not possible	-
E	5 days	300 per day
F	2 days	500 per day
G	not possible	-
H	not possible	-

Which activity should be crashed? [1 mark]

\_\_\_\_\_

How many days should it be crashed? [1 mark]

\_\_\_\_\_

How much will be the additional cost? [1 mark]

\_\_\_\_\_

### 3. Multiple Choice Questions

(Write your answers on the OMR sheet on the last page) [15 marks]

- 1 A dummy activity is used in PERT to describe
  - a) Necessary time delays
  - b) Resource restrictions
  - c) Precedence relationships
  - d) The critical path
  - e) The activities with no slack
- 2 Which of the following statement/s is/are true?
  - a) Total float is a sum of free float and independent float
  - b) Independent float can be negative or positive
  - c) Free float is always available for all the activities on the critical path
  - d) Only the activities on the critical path have an independent float of zero
  - e) Both (b) and (c) above
- 3 Gantt charts are
  - a) Used to show the demand and supply curves of the materials needed for the projects
  - b) Depicted using bars to represent the activities on a critical path
  - c) Used to represent the activities of the schedule and their times on a scale
  - d) Used to represent the amount of work done during an activity and time lapse since the start of an activity
  - e) None of the above
- 4 Gantt charts are
  - a) Used to show the demand and supply curves of the materials needed for the projects
  - b) Depicted using bars to represent the activities on a critical path
  - c) Used to represent the activities of the schedule and their times on a scale
  - d) Used to represent the amount of work done during an activity and time lapse since the start of an activity
  - e) None of the above
- 5 In a network diagram the critical path is the path, which
  - a) Has the longest duration
  - b) Can be completed without committing any resources
  - c) Does not contain any dummy activity
  - d) Contains the largest number of dummy activities
  - e) Has the shortest duration
- 6 The optimistic, most likely and the pessimistic durations of an activity are 2, 4 and 8 days respectively. The mean and variance under PERT assumptions are
  - a) 4, 1
  - b) 4.33, 2
  - c) 4.67, 1
  - d) 4.33, 1
  - e) 4, 2
- 7 In every project network
  - a) there is exactly one critical path
  - b) there is at least one critical paths
  - c) there need not be any critical paths
  - d) all of the above
  - e) none of the above

- 8 The process of utilizing activity floats to obtain an acceptable resource usage profile without increasing project duration is called
- resource aggregation
  - resource planning
  - resource leveling
  - resource allocation
  - resource alteration
- 9 Duration of critical path is obtained by
- Subtracting the sum of duration of all the critical activities from the sum of duration of all non-critical activities
  - The addition of duration of all non-critical activities
  - The sum of duration of all the activities on the critical path
  - The sum of duration of all the activities
  - None of the above
- 10 The component of commercial feasibility is
- Demand & Supply Assessment
  - Plant location
  - Financial projections
  - Background of promoters
  - Socio Cost Benefit Analysis
- 11 The component of technical feasibility is
- Demand position
  - Pricing policy
  - Plant location
  - Promoters background
  - None of the above
- 12 Managerial feasibility does not evaluate
- qualities of promoters
  - organization structure
  - legal and structural form of organization
  - market potential
  - background of promoters
- 13 The parameter to ascertain the financial feasibility of the project is
- Domestic resource cost
  - Effective rate of protection
  - Economic rate of return
  - Net present value
- 14 Almost more than 80% work is done in the \_\_\_\_\_ phase of project life cycle
- Project Planning
  - Project Identification
  - Project Growth & Organization
  - Project Clean Up Phase
  - None of the above
- 15 \_\_\_\_\_ forms part of social cost benefit analysis
- Savings/Earnings in Foreign Exchange
  - Net Impact on Balance of Payments
  - Employment Potential
  - All of the above
  - None of the above

- 16 \_\_\_\_\_ are stakeholders in a project
- Society
  - Industry
  - Investor
  - All of the above
  - None of the above
- 17 \_\_\_\_\_ project attempts to minimize under utilization of plant capacity
- Balancing project
  - Expansion project
  - Modernization project
  - Replacement project
  - Large scale project
- 18 \_\_\_\_\_ is a source of primary data
- Market survey
  - Census data
  - Advertising agency reports
  - Sectoral reports
  - Company reports
- 19 \_\_\_\_\_ project is undertaken to maintain production at acceptable efficiency level
- Diversification project
  - Expansion project
  - Balancing project
  - Modernization project
  - Small scale project
- 20 \_\_\_\_\_ project is aimed to strengthen the present positions e.g. product line, technical service, product or process improvement, etc.
- Aggressive project
  - Defensive project
  - High Technology project
  - Replacement project
  - Diversification project
- 21 Preliminary expenses consist of
- Cost of Indigenous & Imported Machinery
  - Cost of land, legal charges for registration, leveling, laying of roads, fencing
  - Furniture, Office Machine & Equipment, Vehicles, Electric Installations, Laboratory Equipment, Utilities, etc.
  - Expenses for Project Identification, Market Survey, Feasibility Studies, Incorporation of Business
- 22 Pre-operative expenses include
- Establishment Expenses
  - Interest During Construction Period
  - All of the above
  - None of the above
- 23 \_\_\_\_\_ forms part of social cost benefit analysis
- Savings/Earnings in Foreign Exchange
  - Net Impact on Balance of Payments
  - Employment Potential
  - All of the above

- 24 The component of technical feasibility is
- Demand position
  - Pricing policy
  - Distribution channels
  - None of the above
- 25 Which of the following statement/s is/are true?
- A project is an ad hoc activity of the firm
  - A project should be viewed as the main activity of the firm
  - A project should be viewed as something that contributes to the ability of the organization
  - A project is a thing which contributes to the ability of the project manager
  - None of the above
- 26 Which of the following factors call for the project management?
- Interdependencies among the activities undertaken by various departments
  - Sharing of resources
  - Size of the task involved
  - Both (a) and (b) above
  - All of (a), (b) and (c) above
- 27 Which of the following is correct sequence of life cycle of a project?
- Planning, Selection, Scheduling, Termination
  - Selection, Implementation, Scheduling, Monitoring, Termination
  - Planning, Implementation, Control, Evaluation
  - Planning, Scheduling, Implementation, Evaluation, Control
  - Planning, Implementation, Scheduling, Termination
- 28 During which stage of life cycle of a project is the level of activity highest?
- Concept & Initiation
  - Planning & Scheduling
  - Implementation, Monitoring & Control
  - Evaluation
  - Termination
- 29 Which of the following is/are the informational inputs for project planning?
- Statement of work
  - Project specifications
  - Milestone schedule
  - Work breakdown structure
  - All of the above
- 30 Which of the following statement/s is/are true?
- Total float is a sum of free float and independent float
  - Independent float can be negative or positive
  - Free float is always available for all the activities on the critical path
  - Only the activities on the critical path have an independent float of zero
  - Both (b) and (c) above



OMR Sheet

- 1    (A)    (B)    (C)    (D)    (E)
- 2    (A)    (B)    (C)    (D)    (E)
- 3    (A)    (B)    (C)    (D)    (E)
- 4    (A)    (B)    (C)    (D)    (E)
- 5    (A)    (B)    (C)    (D)    (E)
- 6    (A)    (B)    (C)    (D)    (E)
- 7    (A)    (B)    (C)    (D)    (E)
- 8    (A)    (B)    (C)    (D)    (E)
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- 11   (A)    (B)    (C)    (D)    (E)
- 12   (A)    (B)    (C)    (D)    (E)
- 13   (A)    (B)    (C)    (D)    (E)
- 14   (A)    (B)    (C)    (D)    (E)
- 15   (A)    (B)    (C)    (D)    (E)
- 16   (A)    (B)    (C)    (D)    (E)
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- 23   (A)    (B)    (C)    (D)    (E)
- 24   (A)    (B)    (C)    (D)    (E)
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