http://www.sgbauonline.com

B.E. Eighth Semester (Civil Engineering) (CGS)

10231 : Project Planning & Management : 8 CE 03

P. Pages : 3 | **AU - 2969**

Time : Three Hours | Max. Marks : 80

* 0 6 6 3 *

Notes :
1. Due credit will be given to neatness and adequate dimensions.
2. Assume suitable data wherever necessary.
3. Diagrams and chemical equations should be given wherever necessary.
4. Illustrate your answer necessary with the help of neat sketches.
5. Use of normal distribution table is permitted.
6. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION - A

1. a) What are Gantt bar charts and what are their weaknesses? **6**

b) The following project is to be represented by a bar chart. The project commences on Friday, 18th May, 2018 with Sunday's as holidays. Draw the bar chart denoting calendar days. **7**

Activity	A	B	C	D	E	F	G	H
Duration Days	7	5	7	8	4	4	12	15

Activity A and B can occur concurrently. Activity C can take place after activity B is completed. Activity D, F & C can occur concurrently. Activity H can start two day after the commencement of activity F. Activity G should follow Activity E. Activity E can being concurrently with activity H.

OR

2. a) Describe various phases of project management. **6**

b) What is a milestone chart? How does it differ from a bar chart? How can milestone chart be developed into a network? **7**

3. a) Define an 'event' and an 'activity' differentiate clearly between the two. **6**

b) A project consist of eight events having predecessor relationship as under. Draw the network. **7**

Event	Immediate Predecessor
1	---
2	1
3	1
4	2, 3
5	3, 4
6	3, 5
7	6
8	4, 7

OR

http://www.sgbauonline.com

http://www.sgbauonline.com

http://www.sgbauonline.com

http://www.sgbauonline.com

4. a) What is a float and it is useful in a CPM network? 6

b) A network is to be updated after 8 days of its completion. The following condition exists. Determine the critical path for both network. 7

Activity	1 - 2	1 - 3	2 - 4	2 - 5	3 - 5	4 - 6	5 - 6
Duration in days	3	6	4	3	4	8	9

i) Activity 1 - 2, 1 - 3 are completed
ii) Activity 2 - 4 is in progress and require 6 more days.
iii) Activity 3 - 5 is delayed drastically and requires 8 days instead of 4.
iv) All other activities are as per schedule.

5. a) Explain three time estimates in PERT. 7

b) The three time estimates data is given. Draw the network and answer the following : 7
i) Probability of completing the project in 35 days.
ii) Slack for each event.

Activity	t_O	t_P	t_E
1 - 2	6	9	18
1 - 3	5	8	17
2 - 4	4	7	22
3 - 4	4	7	16
4 - 5	4	10	22
2 - 5	4	7	10
3 - 5	2	5	8

OR

6. a) Define the term 'direct cost', indirect cost and outage cost. Also draw a typical cost - duration curve and show on it optimum duration and minimum project cost. 7

b) Find optimum cost and optimum duration for the project given below. The indirect cost of the project is Rs. 300 / day. 7

Activity	Normal time (t_n)	Crash time (t_c)	Normal cost (C_n)	Crash cost (C_c)
1 - 2	2	1	1500	1700
1 - 3	7	5	1200	2000
2 - 3	6	4	2400	3000
3 - 4	4	3	400	600
3 - 5	2	1	4000	4200
4 - 5	8	6	1500	2500

SECTION - B

7. a) Why resource allocation is necessary in project management? Explain in brief. 6

b) Explain the following terms 7
i) Histogram
ii) Resource smoothing
iii) Resource levelling

OR

http://www.sgbauonline.com

http://www.sgbauonline.com

http://www.sgbauonline.com

http://www.sgbauonline.com

8. a) What are the objectives of resource allocation? 6

b) Carry out resource leveling for a project having following data. The requirement of resources should not exceed 10 per day. 7

Activity	Duration	Labour
1 - 2	2	6
1 - 3	2	4
1 - 4	2	3
1 - 6	4	9
2 - 3	2	7
3 - 5	3	2
4 - 5	3	8
5 - 6	4	1

9. a) Discuss the advantage and disadvantage of line organisation. 6

b) Draw a structure of a functional organisation. Discuss the merit and demerit related to other types of organisations. 7

OR

10. a) Describe need of inventory and inventory control in material management. 6

b) Explain ABC analysis of material management. 7

11. a) Compare the mechanism and operation of the power shovel and dragline. Under what condition is machine best suited. 7

b) Calculate the output of $2m^3$ power shovel handling on an average $2.25\,m^3$ of base soil. The shovel makes 2.5 trips per minute without loosing time. Take swell factor = 0.25. 7

OR

12. a) Explain the working of non - tilting type concrete mixer. 7

b) What will be the maximum size of a power shovel that will excavate $30000\,m^3$ of ordinary earth in 150 working days of 8 hours each? The conversion factor are 0.87 and 0.75 respectively. Time required for one cycle is 3 minute. 7

****

http://www.sgbauonline.com

http://www.sgbauonline.com

http://www.sgbauonline.com

http://www.sgbauonline.com