

Civil Engg (Struc) [P218-111 (T2)] Civil (WREE) [P218-121 (T2)] Comp. Engg. [P218-131 (T2)] E&TC [P218-141 (T2)] Mech [P218-151 (T2)]
 Total No. of Questions - 4 Total No. of Printed Pages: 3

G.R. No.	
----------	--

OCTOBER 2018 / IN - SEM (T2)

S. Y. M. TECH. (ALL DEPTS.) (SEMESTER - I)

COURSE NAME: PROJECT PLANNING AND MANAGEMENT

COURSE CODE: IOEP21171B

(PATTERN 2017)

Time: [1 Hour]

[Max. Marks: 30]

(*) Instructions to candidates:

- 1) Answer Q.1 OR Q.2, Q.3 OR Q.4
- 2) Figures to the right indicate full marks.
- 3) Use of scientific calculator is allowed
- 4) Use suitable data where ever required

Q.1) a. Frame a CPM network for the data given in table below. Also find i) critical path and normal duration of project. ii) calculate normal cost and optimum cost. Assume the total cost of the project as Rs. 11,000 and Indirect cost as Rs. 300/day. Calculate optimum duration.

Activity	Events		Duration		Cost slope Rs. Per day
	preceding	succeeding	Normal	Crash	
A	10	30	7	3	100
B	10	20	9	7	60
C	30	50	4	1	150
D	20	50	5	3	250
E	20	40	3	1	20
F	50	60	6	4	332
G	40	60	2	1	1000

[10 marks]

Page 1/3

b. Enlist the various sources of risk in a project [5 marks]

OR

Q.2) a. For the network shown in figure the data about cost is given in table. The indirect cost of project is Rs. 3000 per week. Determine optimum cost and duration. [10 marks]

Events	Normal duration	Crash duration	Normal cost	Crash cost	Cost slope per week
10-20	12	6	14000	29000	2500
10-30	16	10	8000	17000	1500
20-30	8	2	12000	18000	1500
20-40	10	6	16000	30000	3500
30-40	10	6	10000	22000	2000

b. Enlist the phases of risk assessment [5 marks]

Q.3) a. Discuss the importance of operations research in decision making. [8 marks]

b. Formulate a linear model for the following: A firm produces an alloy having the following specifications:

i) Sp. Gravity ≤ 0.98 ii) chromium $\geq 8\%$ iii) melting point $\geq 450^\circ\text{C}$.

Raw materials A, B and C having the properties shown in table can be used to make the alloy.

Property	Properties of raw materials		
	A	B	C
Sp. Gravity	0.92	0.97	1.04
Chromium	7%	13%	16%
Melting point	440°C	490°C	480°C

Cost of various raw materials per unit ton are Rs. 90 for A, Rs. 280 for B and Rs. 40 for C. Find the proportion in which A, B and C be used to obtain an alloy of desired properties while cost of raw materials is minimum.

[7 marks]

page 2/3

OR

Q.4) a. Enlist the advantages and limitations of Linear Programming

[8 marks]

b. Formulate a linear model for the following: A resourceful home decorator manufactures two types of lamps A and B. Both the lamps go through two technicians first a cutter and then a finisher. Lamp A requires 2 hours of cutter time and one hour of finisher's time. Lamp B requires one hour of cutter time and two hours of finisher's time. The cutter has 104 hours and finisher 76 hours available time. Profit on one lamp of A is Rs. 6.00 and one lamp of B is Rs. 11.00. Assuming that the decorator can sell all that he produces, how many of each type of lamps should he manufacture to obtain the best return?

[7 marks]