

Code No: RR220101

Set No.

1

II B.Tech. II Semester Supplementary Examinations, November/December –2005
BUILDING PLANNING & CONSTRUCTION MANAGEMENT
(Civil Engineering)

Time: 3 Hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Discuss in detail the necessity of regulations while planning a building. [16]
- 2.a) Define illumination. Give the principles of illumination for the following buildings.
 - i) Air port buildings
 - ii) Hotels
 - iii) Hospitals
- b) Write a note on Day-lighting. [9+7]
3. What are the main concerns for orientation of a residential building? Describe in detail, considering all the rooms in a typical residence. [16]
4. Design an village panchayat office for the following requirements and draw a line diagram .
 - a) Entrance & waiting room
 - b) Meeting hall to accommodate 40 people
 - c) V.P. President Chambers with attached toilet
 - d) V.P. Secretary Chambers with attached toilet
 - e) Office for 10 staff
 - f) Toilet blocks – 2 Nos.
 - g) Necessary provision to be made for corridors. [16]

Contd..2

5. In an urban renewal consultancy project, the following activities and their interactions are given with their duration in weeks.

Event No.	Event	Activity	Duration (wks)	Preceded by	Followed by
1	Finalising requirements of the authority	A	1	None	B,E
2	Organising & training of the socio-demographic surveyor	B	1	A	C
3	Socio-demographic survey	C	3	B	E
4	Physical survey and preparation of maps	D	4	None	E
5	Planning land use and infrastructure	E	2	A,C,D	F
6	Design of infrastructure, buildings and structures with drawings	F	2	E	G
7	Quantity surveying	G	1	F	H
8	Submission of the project report	H	2	G	None

- Show the critical path with floats of all activities.
- Find early start and late start of D.
- Is there free float of any activity? Which activity and of what magnitude? [8+4+4]

6. In a factory the average stock level should be around 750 including all items due to financial restrictions. There are three products, details of which are given below:

Stocks	1	2	3
Holding cost per unit per time	0.05	0.00	0.04
Set up cost per production run	50	40	60
Rate of demand per unit time	100	120	75

Estimate the optimal production quantities.

[16]

- Explain the basic concept of resource management support your answer with a flow diagram and example. [16]
- Write a detailed note on the various types of earth-moving equipment. [16]

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1. Explain the objectives of building bye-laws. [16]

- 2.a) Differentiate between natural ventilation and artificial ventilation.
b) Define 'air charges' and give the recommended air changes for the following:
 - i) Kitchen
 - ii) Cinema theatres
 - iii) Offices. [8+8]

- 3.a) What are the different sizes of doors normally used in residences and in which locations are these used?
b) What are the considerations for locating and designing windows and chajjas in the various rooms of a residence? [8+8]

4. Design a College Canteen for the following requirements. Draw a line diagram and assume data suitably.
 - a) Entrance Hall
 - b) Dining Hall of 100 Sqm
 - c) Staff room of 30 Sqm
 - d) Staff room for ladies of 30 Sqm
 - e) Kitchen of 40 Sqm
 - f) Store of 15 Sqm
 - g) Utility of 20 Sqm
 - h) Toilet blocks 2 Nos.
 - i) Xerox counter-15 Sqm
 - j) STD booth-15 Sqm. [16]

Contd..2

5. In an out-of-town site, the project manager notices that work is being disrupted for want of fuel. An investigation reveals the following data:
- Fuel is brought to site five times a month.
 - Probabilities of fuel usage during reorder period.

Demand in litres during reorder period	No. of times	Probabilities
150	3	0.03
200	4	0.04
250	6	0.06
300	68	0.68
350	9	0.09
400	7	0.07
450	3	
	100 (Total)	

The out-of-stock cost of diesel is estimated at Rs.50/- per litre, and carrying cost is Rs.10/- including losses. Estimate the optimum level of safety stock. [16]

- Explain normal and cash estimates under the CPM system.
 - How can linear programming be used to optimize time cost trade off in a project schedule? [8+8]
- Explain how PERT is useful to estimate the uncertain duration of a project schedule.
 - What are the problems associated with usage of PERT to incorporate uncertainty in the project schedule. [8+8]
8. Write short notes on:
- Earth-moving equipment
 - Belts and conveyors. [8+8]

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(Civil Engineering)

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Answer any FIVE Questions

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1. How are buildings classified? Explain in brief the regulations for any three types of buildings. [4+12]

- 2.a) Differentiate between natural lighting and artificial lighting.
b) Define luminous flux. Give the recommended values of illumination for following locations:
i) Banks ii) Cinemas iii) Schools [8+8]

- 3.a) What are the typical patterns of kitchen layout and where is each of them suitable?
b) Draw a section to show the typical heights of a kitchen platform and storage cabinets. [8+8]

4. Design a post office for a city for the following requirements and draw a line diagram.
 - a) Public space
 - b) Space for counters of 10 Nos.
 - c) Space for Post Master chambers with attached toilet –1 No.
 - d) Space for post sorting counter –1 No.
 - e) Space for strong room –1 No.
 - f) Space for store room – 1 No.
 - g) Space for record room – 1No.
 - h) Space for Asst post master chamber with attached toilet – 1No.
 - i) Toilet blocks – 2 Nos.
 - j) Space for rest room – 1 No.
 - k) Space for recreation room – 1 No.

[16]

Contd..2

5. In a factory the average stock level should be around 750 including all items due to financial restrictions. There are three products, details of which are given below:

Stocks	1	2	3
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Set up cost per production run	50	40	60
Rate of demand per unit time	100	120	75

Estimate the optimal production quantities.

[16]

6. A project has the following schedule construct the PERT network and complete the earliest start time for each activity.

Activity	Time in weeks	Predecessors
A	3	None
B	2	A
C	4	A
D	5	B
E	3	C
F	6	D

7. Write short notes on:
- earth-compacting equipment
 - economics of owning and operating construction equipment. [8+8]
8. What are the main Techniques to make the construction process systematic and scientific? [16]

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Answer any FIVE Questions

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1. Write short notes on the following:
 - a) Building bye-laws.
 - b) Classification of buildings
 - c) Open spaces in buildings. [6+5+5]

- 2.a) Define plinth area. List the areas which have to be included and which have to be excluded while calculating plinth area.
b) Write a note on Floor Space Index. [8+8]

- 3.a) What is the minimum size of a kitchen as per standards?
b) What are the planning considerations for a combined kitchen and dining space in a residence? [4+12]

- 4) Design a Primary Health Center with following facilities.
 - a) Entrance and waiting space
 - b) Doctors consultation room 2 Nos.
 - c) Examination room
 - d) Operation Theatre
 - e) Medical store
 - f) Office
 - g) Laboratory
 - h) Family planning unit
 - i) Male wards for 10 beds
 - j) Female wards for 10 beds
 - k) Toilet blocks 2Nos.

Draw a single line diagram with suitable dimensions.

[16]

Contd..2

5. The inventory information for four items in a firm is presented in the following:

Item	Annual value (Rs.)	No. of times ordered/year
1	9,000/-	3
2	15,000/-	3
3	18,000/-	3
4	24,000/-	3

Minimize the inventory level without increasing the purchasing work load.
Alternatively, minimize the purchase work load without increasing average inventory. [16]

- 6.a) What do you mean by bar chart.
b) Explain the features which make it a useful tool and also explain its limitations. [8+8]

7. What are the various methods of representing the manpower requirements of a project? How do these help in project analysis? [16]

8. Write short notes on:
a) earth-compacting equipment
b) economics of owning and operating construction equipment. [8+8]

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