

321

8E1807

Roll No. _____

Total No. of Pages: 4

8E1807

B. Tech. VIII - Sem. (Main/Back) Exam., June - 2023

Civil Engineering

8CE4-01 Project Planning and Construction Management

Time: 3 Hours

Maximum Marks: 120

Min. Passing Marks: 42

*Instructions to Candidates:**Attempt all ten questions from Part A, five questions out of seven questions from Part B and four questions out of five from Part C.**Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.**Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)*1. NIL2. NIL**PART – A****[10×2=20]****(Answer should be given up to 25 words only)****All questions are compulsory**

- Q.1 Write various steps involved in project planning.
- Q.2 Write short notes on Work Breakdown Structure of a project.
- Q.3 What are the shortcomings of a bar chart? How are these removed?
- Q.4 Enumerate various criteria of Financial Evaluation of Construction Projects.

- Q.5 Explain in Brief about contract negotiation.
- Q.6 Define Earnest Money Deposit and Security Deposit in a tender.
- Q.7 Define an 'event' and an 'activity'. Differentiate clearly between the two.
- Q.8 Define the term 'Project Updating'. Why it is necessary?
- Q.9 Write short notes on 'Time-Cost Trade off' and 'Cost Slope'.
- Q.10 Write a brief note on 'Environmental issues in construction'.

PART – B

[5×8=40]

(Analytical/Problem solving questions)

Attempt any five questions

- Q.1 Explain categories of construction projects and project development process.
- Q.2 Explain direct and indirect cost associated with project cost with the help of graph showing their variation with time.
- Q.3 Differentiate between CPM and PERT Networks. Discuss the statistical approach of a PERT Network.
- Q.4 Write down the rules for inviting and processing tenders and note down the legal aspects of contract.
- Q.5 What are objectives of resource allocation? Differentiate between resource smoothing and resource levelling.
- Q.6 Define the Project Management Information System (PMIS) and discuss its components.

323

Q.7 Define Earliest Start Time, Earliest Finish Time and Latest Start and Latest Finish Time in a CPM networks. A project consists of nine activities and details about them are given below. Draw the project network the event identify critical path and determine duration of the project.

Activity	A	B	C	D	E	F	G	H	I (Last)
Predecessor (s)	-	A	B	C	D	B	B	G	E,F,H
Duration (D) in weeks	8	6	3	7	5	6	3	10	5

PART – C

[4×15=60]

(Descriptive/Analytical/Problem Solving/Design Questions)

Attempt any four questions

Q.1 A PERT network consists of seven activities as follows. The optimistic time (t_o), most likely (t_m) and pessimistic time (t_p) as estimated for different activities in weeks are given in table below. Draw the network. Determine critical path and standard deviation of project. What is the probability of completing the project 3 weeks earlier than the expected time?

Activity / Time	1-2	1-3	1-4	2-5	3-5	4-6	5-6
t_o	1	1	2	1	2	2	3
t_m	1	4	2	1	5	5	6
t_p	7	7	8	1	14	8	15

Q.2 Explain in brief about contract document. What are the various types of contracts and tenders giving merits and demerits of each? Also write a note on determination of a contract.

Q.3 Explain safety measures for demolition. Discuss causes and prevention of accidents at construction site.

- Q.4 A small project consisting of 7 activities A, B, C, D, E, F and G has its duration and cost data for normal and crash is given below. Draw the network crash to achieve optimum duration and optimum cost if the indirect cost is estimated to ₹ 180 per day of the project duration.

Activity	Normal Time (Days)	Crash Time (Days)	Normal Cost (₹)	Crash Cost (₹)
A(1-2)	3	2	350	400
B(2-3)	6	4	1440	1620
C(2-4)	9	8	2160	2220
D(2-5)	7	5	1300	1600
E(3-5)	8	7	500	600
F(4-5)	5	3	1600	1770
G(5-6)	8	7	450	750

- Q.5 Explain benefits of computerized information system in project management. Explain environmental and social aspects of various types of construction projects with example.
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325

8E1860

Roll No. _____

Total No. of Pages: 2**8E1860****B. Tech. VIII - Sem. (Main) Exam., June - 2023****Open Elective-II****8TT6-60.2 Open Elective-II Disaster Management****Time: 3 Hours****Maximum Marks: 120****Min. Passing Marks: 42***Instructions to Candidates:**Attempt all ten questions from Part A, five questions out of seven questions from Part B and four questions out of five from Part C.**Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.**Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)*1. NIL2. NIL**PART – A****[10×2=20]****(Answer should be given up to 25 words only)****All questions are compulsory**

- Q.1 What is Disaster and its management system?
- Q.2 Give type of disasters.
- Q.3 What are social issues regarding Hazards?
- Q.4 Which pandemic affects badly world over recently?
- Q.5 What contributions society can contribute in disaster management?
- Q.6 What are Geological based disasters?
- Q.7 Which type of disaster developed due to increased Traffic in present times?

- Q.8 What is disaster mitigation?
Q.9 What are Textile Industry based Hazards?
Q.10 What is Tsunami?

PART – B

[5×8=40]

(Analytical/Problem solving questions)

Attempt any five questions

- Q.1 What are Hydro-metrological based disaster and how can it may controlled?
Q.2 Write a note on Forest fires and their affects.
Q.3 What is Volcanic Eruptions? What are its causes and effects?
Q.4 Describe the industrial hazards.
Q.5 What measures society can take to minimize environmental related issues?
Q.6 How major power break downs may be controlled?
Q.7 What do understand by disaster vulnerability?

PART – C

[4×15=60]

(Descriptive/Analytical/Problem Solving/Design Questions)

Attempt any four questions

- Q.1 Discuss type of disasters with example and their management cycles.
Q.2 What are Hearth Hazards and their causes, enlist reasons and suggest solutions?
Q.3 What is water pollution treatment plant in Textile processing industry and what is the roll of management?
Q.4 Write a note on Air pollution with examples related to recent issues.
Q.5 Discuss reasons of flood & cloud burst as well as drought in present times.
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327

8E8091

Roll No. _____

Total No. of Pages: **2****8E8091****B. Tech. VIII - Sem. (Main/Back) Exam., June - 2023****Civil Engineering****8CE1A Water Resources Engineering-II****Time: 3 Hours****Maximum Marks: 80****Min. Passing Marks: 26***Instructions to Candidates:*

*Attempt any **five** questions, selecting one question from each unit. All questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

*Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)*

1. NIL2. NIL**UNIT- I**

- Q.1 (a) Define falls, give classification of falls. [8]
 (b) Explain distributory head regulator and cross-head regulator with the help of neat diagram. [8]

OR

- Q.1 (a) Define cross-drainage structure, also discuss merits and demerits of different types C-D structure. [8]
 (b) Explain various types of cross-drainage structure with the help of neat diagram. [8]

UNIT- II

- Q.2 (a) What is the difference between weirs and barrage? [8]
 (b) Write a short note on Bligh's and Khosla's methods of design. [8]

OR

- Q.2 (a) Give difference between silt excluders and silt ejectors. [8]
 (b) Define Diversion Head works. Discuss different parts of diversion head work with the help of neat diagram. [8]

UNIT- III

- Q.3 (a) Discuss uses and causes of failures of Earthen Dams. [8]
 (b) Define flownet and characteristics of flownet with the help of neat diagram. [8]

OR

- Q.3 (a) Discuss force acting on a gravity dam with the help of neat diagram. [8]
 (b) Explain construction and stability requirements of gravity dam. [8]

UNIT- IV

- Q.4 (a) Define spillways and write about flood routing through spillways. [8]
 (b) Explain different types of spillways with their uses. [8]

OR

- Q.4 (a) Write about elements of power house structure. [8]
 (b) Write short notes on the followings - [8]
 (i) Draft tube
 (ii) Setting of turbine
 (iii) Cavitation

UNIT- V

- Q.5 (a) What do you understand by impact of water projects on river regimes and environment? [8]
 (b) Write a short note on reservoir sedimentation and water shed management. [8]

OR

- Q.5 (a) Define optimization, also discuss about optimization techniques and system approach. [8]
 (b) Write short notes on G.I.S. and computer aided irrigation design. [8]

329

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8E1837

Roll No. _____

Total No. of Pages: **2****8E1837****B. Tech. VIII - Sem. (Main/Back) Exam., June - 2023****Open Elective-II****8AG6-60.1 Open Elective-II Energy Management****Time: 3 Hours****Maximum Marks: 120****Min. Passing Marks: 42***Instructions to Candidates:**Attempt all ten questions from Part A, five questions out of seven questions from Part B and four questions out of five from Part C.**Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.**Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)*1. NIL2. NIL**PART – A****[10×2=20]****(Answer should be given up to 25 words only)****All questions are compulsory**

- Q.1 Define the term Energy Auditing.
- Q.2 Define the term Energy Efficiency.
- Q.3 Define Sustainable Development.
- Q.4 Define the term Energy Forecasting.
- Q.5 Differentiate between Energy Losses and Energy Savings.
- Q.6 Differentiate between Direct and Indirect Energy.
- Q.7 Define Energy Matrix.

- Q.8 Differentiate between Commercial and Non-Commercial Energy.
- Q.9 What do you mean by Energy Integration?
- Q.10 Differentiate between Energy Management and Energy Conservation.

PART – B

[5×8=40]

(Analytical/Problem solving questions)

Attempt any five questions

- Q.1 What are the different types of energy auditing tools? Explain in detail.
- Q.2 How energy auditing is different from energy forecasting? Explain.
- Q.3 Why energy management is essential in the Indian agriculture system?
- Q.4 How energy efficiency is capable of deriving management outputs?
- Q.5 What is the need for energy management in transportation sector?
- Q.6 What do you mean by Energy Accounting? Mention the procedure for it.
- Q.7 Discuss various ways of Energy conservation in rural areas.

PART – C

[4×15=60]

(Descriptive/Analytical/Problem Solving/Design Questions)

Attempt any four questions

- Q.1 Suggest various energy conservation measures and energy savings therein for any agro-based industry.
- Q.2 Describe in detail the pattern of energy consumption and constraints in the production of agriculture in India.
- Q.3 Why is agricultural waste utilization at the generation point necessary?
- Q.4 Discuss various energy-saving measures in buildings.
- Q.5 Discuss various energy conservation measures by the use of renewable sources of energy.
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