QP-9925

Seat No. CE- 5th. Sem 38

Total No. of Pages : 2

OCT-NOV 2025 WINTER EXAMINATION

1154 B.Tech. CBCS

Sub. Name: Water Resource Engineering-I

Sub. Code: 66235/80763/81000

Day and Date: Friday ,12-12-2025 **Total Marks: 70**

Time: 02:30 PM To 05:00 PM

Instructions:
1. Draw neat labelled diagrams wherever necessary
2. Figures to the right indicate full marks
3. Use of Scientific calculator is allowed

Special Inst.: Question number 4 and 8 are compulsory questions. solve any two questions from question number 1to 3 and any two questions from question number 5 to 7.

Q1) A. Enlist different recording type of rain gauges and explain any one of type rain gauge with suitable sketch in brief ? [6]

B. What is Engineering Hydrology ? Explain scope of Engineering hydrology [6]

Q2) [11]

a. Define Infiltration ? Explain the methods to measure infiltration ? [5]

b. The rates of rainfall for sucessive 30 minutes periods of a three hours storm are: 1.6, 3.6,5.0, 2.8, 2.2 and 1.0 cm/h. The corrospending surface runoff is estimated to be 3.2 cm. Calculate Phi index and W index. [6]

Q3) [11]

a. Define Term Flood Hydrograph ? Explain its components ? [5]

b. Define Standard Project flood (SPF), maximum Probable flood (MPF) and Design Flood [6]

Q4) Write a note on:(Solve any two) [12]

a. Flood Discharge by rational Formula. [6]

b. Measurment of rainfall [6]

c. Mesurment of Runoff [6]

Q5) [11]

a. Explain in detail with neat sketch. [5]
a) Aquifer b) Aquiclude c) Aquifuge d) Aquitard e) Perched Aquifer

b. Derive the equation for discharge well penetrating through a confined aquifer [6]

Q6) [12]

a. What is mean by irrigation? Explain benefits and ill effects of irrigation ? [6]

b. Explain in detail general layout, main components & functioning of Percolation tank ? [6]

Q7) [11]

a. Explain in detail classes and availability of soil water ? [5]

b. Explain in detail methods of improving duty ? [6]

Q8) Write a Note on:(Solve any two) [12]

a. Crop rotation [6]

b. Bandhara Irrigation [6]

c. Sprinklar Irrigation [6]

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -
This Question Paper may be distributed for following Subjects as common code.
सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (101) Bachelor of Engineering (66235) Water Resource Engineering-I Part 3 SEM 5
2] (101) Bachelor of Engineering (81000) Water Resource Engineering-I Part 3 SEM 5
3] (1154) B.Tech. CBCS (80763) Water Resource Engineering-I Part 3 SEM 5

Seat No. CE-5th-Sem 40

OCT-NOV 2025 WINTER EXAMINATION

1154 B.Tech. CBCS

Sub. Name: Design of Steel Structures

Sub. Code: 66236/80764/81001

Day and Date: Monday ,15-12-2025 **Total Marks: 70**

Time: 02:30 PM To 05:00 PM

Instructions:
1. **All questions are compulsory**
2. **Assume suitable data wherever necessary and mention it boldly**
3. **Draw neat labelled diagrams wherever necessary**
4. **Figures to the right indicate full marks**
5. **Use of Scientific calculator is allowed**

Special Inst.: **IS 800-2007 and steel table is allowed in Examination**

Q1) Attempt all Questions **[7]**

a. Compare working stress and limit state method **[3]**

b. Explain types of connections **[4]**

Q2) Design a lap joint between plates of size 100mm X 16mm thick and 100mm X 10mm thick to transmit the factored load of 100kN. Use 4.6 grade 16mm diameter bolts in single row. Take e = 50mm and pitch p=40mm **[14]**

Q3) Design a single angle section for a tension member of a roof truss to carry a factored tensile force of 150 kN. The angle is connected to 10mm gusset plate with.6 M20 bolts of grade 4.6 in single line. The steel used is of Fe 415 grade **[14]**

Q4) Find the compressive strength of strut 2ISA 150X115X10mm connected back to back by longer leg using two bolts at each end as shown in fig. 1. The centre to centre distance of intersection is 3m. **[14]**

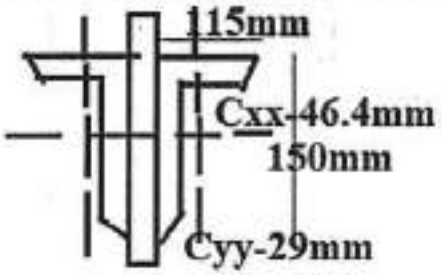

Fig.1 Q4

Q5) Attempt all questions **[7]**

a. What is built up section explain briefly **[3]**

41

b. Explain classification of beams [4]

Q6) Design a slab base for a column ISHB350@710.24 having factored load 1000 kN The column. The base rests on concrete pedestal of grade M20. Assume the column is machined smooth for perfect bearing. Take sbc=250 kN/m^2 [14]

Q7) Design a simply supported beam of effective span 8.3 m carrying a factored uniformly distributed load of 20 kN/m. The beam is laterally supported throughout [14]

Q8) Calculate the design forces for a gantry girder to be used in an industrial building carrying a manually operated overhead traveling crane for the following data: [14]

- Crane capacity - 250kN
- Self-weight of the crane girder excluding trolley - 220kN
- Self-weight of the trolley, electric motor, hook, etc. - 60kN
- Approximate minimum approach of the crane hook to the gantry girder - 15 m
- Wheel base - 3 m
- c/c distance between gantry rails - 15m
- c/c distance between columns (span of gantry girder) - 7.5 m
- Diameter of crane wheels - 150mm • Steel is of grade Fe 410

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -
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1] (101) Bachelor of Engineering (81001) Design of Steel Structures Part 3 SEM 5
2] (1154) B.Tech. CBCS (80764) Design of Steel Structures Part 3 SEM 5
3] (101) Bachelor of Engineering (66236) Design of Steel Structures Part 3 SEM 5

QP-10176

Seat No. CE - 5th Sem 42

Total No. of Pages : 2

OCT-NOV 2025 WINTER EXAMINATION

1154 B.Tech. CBCS

Sub. Name: Environmental Engineering-I

Sub. Code: 66237/80765/81002

Day and Date: Wednesday,17-12-2025 **Total Marks: 70**

Time: 02:30 PM To 05:00 PM

Instructions:
1. **All questions are compulsory**
2. **Assume suitable data wherever necessary and mention it boldly**
3. **Draw neat labelled diagrams wherever necessary**
4. **Figures to the right indicate full marks**

Q1) Attempt all questions. [12]

1. Why it is necessary to study Population forecasting? Discuss in brief population forecasting methods. [8]

2. Sketch and explain river intake structures. [4]

Q2) Attempt any Two. [12]

a. Find the dimensions of rectangular sedimentation basin for the following data: [8]
1. Volume of water to be treated=3 million litres per day
2. Detention period=4 hours
3. Velocity of flow=10 cm/min

OR

Explain the principle and working of Tube settler.

b. What is difference between Coagulation and Flocculation. [4]

Q3) Attempt any Two. [11]

a. Enumerate the various methods of water softening .Explain any one method in detail. [6]

b. Explain the difference between slow and rapid sand filter and Multi-media filter. [5]

OR

State the causes and remedies of odour and taste problem in drinking water.

Q4) Attempt all questions. [12]

1. Write a short note on Salient feature of rural water supply scheme. [8]

2. What are the various forces acting on underground pressure pipes? Explain with formulae. [4]

Q5) Attempt any Two. [12]

43

a. Determine the equivalent length of 30cm diameter pipe for the network mentioned in the table using Hazen Willim's formula. [8]

Pipe	Length(m)	Diameter(mm)
PQ	600	400
QR	700	200
RS	800	300
ST	300	300

OR

Explain any two various layouts of water distribution with neat sketch.

b. Discuss leakage detection in water distribution system with reference to, [4]
i) causes ii) methods

Q6) Attempt any Two. [11]

a. Sketch and explain i) Air valve ii) Sluice valve iii) Non return valve [6]

b. **Write a short note on** [5]
1. Hydrants
2. DPR

OR

Explain necessity and importance of water audit in water supply system.

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -
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1] (101) Bachelor of Engineering (81002) Environmental Engineering-I Part 3 SEM 5
2] (1154) B.Tech. CBCS (80765) Environmental Engineering-I Part 3 SEM 5
3] (101) Bachelor of Engineering (66237) Environmental Engineering-I Part 3 SEM 5

QP-10295

Seat No. CE-5thSem 44

Total No. of Pages : 2

OCT-NOV 2025 WINTER EXAMINATION

1154 B.Tech. CBCS

Sub. Name: Geotechnical Engineering - I

Sub. Code: 66238/80766/81003

Day and Date: Friday ,19-12-2025 **Total Marks: 70**

Time: 02:30 PM To 05:00 PM

Instructions:
1. All questions are compulsory
2. Assume suitable data wherever necessary and mention it boldly
3. Draw neat labelled diagrams wherever necessary
4. Figures to the right indicate full marks

Q1) Attempt any two questions: [12]

a. Describe soil structure in details. [6]

b. Explain Atterberg's Consistency limits. [6]

c. Define in detail casagrande's plasticity chart [6]

Q2) Attempt all questions: [11]

a. Explain concept of Permeability with factors affecting to permeability also. [6]

b. The falling head permeability test was conducted on soil sample of 4 cm diameter and 18 cm length. The head fell from 1.0 m to 0.40 m in 20 minutes. If c/s area of the stand pipe was 1 cm^2, determine the coefficient of permeability. [5]

Q3) Attempt any two questions: [12]

a. Write down names of compaction equipments with their suitability. [6]

b. Describe Terzaghi's Piston and Spring analogy model. [6]

c. Determine coefficient of consolidation by square root of time fitting method. [6]

Q4) Attempt all questions: [11]

a. Explain with neat sketch Newmark's Chart [6]

b. Draw & Explain pressure distribution diagram of vertical stress distribution along a vertical plane. [5]

Q5) Attempt any two questions: [12]

a. Define concept of shear stress and shear strength. [6]

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b. Describe with neat sketch vane shear test [6]

c. A cylinder of soil fails under an axial vertical stress of 160 kN/m^3 when it is laterally unconfined. The failure plane makes an angle of 50° with the horizontal. Calculate the value of cohesion & angle of internal friction of soil. [6]

Q6) Attempt any two questions: [12]

a. Explain Coulomb's wedge theory for earth pressure. [6]

b. Define concept of earth pressure at rest. [6]

c. Compute the intensities of active and passive earth pressure at a depth of 8 m in dry cohesionless sand with an angle of internal friction of 30° and unit weight of 18 kN/ m^3. What will be the intensities of a active and passive earth pressure if water level rises to ground level? Take saturated unit weight of sand 22 kN/ m^3 [6]

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -
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2] (101) Bachelor of Engineering (81003) Geotechnical Engineering - I Part 3 SEM 5
3] (1154) B.Tech. CBCS (80766) Geotechnical Engineering - I Part 3 SEM 5

QP-10490

Seat No. CE-5th Sem 46

Total No. of Pages : 2

OCT-NOV 2025 WINTER EXAMINATION

1154 B.Tech. CBCS

Sub. Name: Waste Management

Sub. Code: 80939/81006

Day and Date: Friday ,26-12-2025 **Total Marks: 70**

Time: 02:30 PM To 05:00 PM

Instructions: 1. All questions are compulsory
2. Draw neat labelled diagrams wherever necessary
3. Figures to the right indicate full marks

Q1) SECTION I **[11]**

Attempt all the questions.

a.Define Waste. Explain types of waste (5)

b.Explain properties of the waste. (6)

Q2) Attempt any Two questions. (12) **[12]**

a. Draw a flow diagram of water treatment plant &explain it in detail. (6)

b. Describe in detail of Nitrification &De-Nitrification . (6)

c .Explain Reverse Osmosis in detail. (6)

Q3) **Attempt any Two questions.** (12) **[12]**

a.Explain in detail flow diagram of Paper industry treatment plant. (6)

b. Describe Equalization process in detail. (6)

c. Define Neutralization process in detail. (6)

Q4) SECTION II **[12]**

Attempt any Two questions. (12)

a. Define collection process of the Municipal waste in detail. (6)

b. What are the sources of Biomedical waste? Describe it in detail. (6)

c. Explain problems of the collection of C& D waste. (6)

Q5) Attempt all the questions. **[11]**

a.Define Hazardous waste. Define classification of waste. (05)

b. Explain processing techniques of the Hazardous waste in detail. (06)

P.T.O.

Q6) Attempt any two questions. (12) [12]

a.Define disposal techniques of E-Waste. Define any one detail. (06)

b.Explain composition of the E-Waste. (06)

c.Describe E-Waste management rules 2016 in detail. (06)

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -
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1] (101) Bachelor of Engineering (81006) Waste Management Part 3 SEM 5

2] (1154) B.Tech. CBCS (80939) Waste Management Part 3 SEM 5

QP-9933

Seat No. CE 6th Sem 48

Total No. of Pages : 3

OCT-NOV 2025 WINTER EXAMINATION

1154 B.Tech. CBCS

Sub. Name: Theory of Structures

Sub. Code: 66873/81515/81792

Day and Date: Friday ,12-12-2025 **Total Marks: 70**

Time: 10:30 AM To 01:00 PM

Instructions:

Special Inst.:
1) **Q. No. 1 & Q. No. 5 are compulsory questions.**
2) **Solve any two questions from Q. No. 2 to Q. No. 4 and any two questions from Q. No. 6 to Q. No. 8.**
3) **Figures to the right indicate full marks.**
4) **Assume suitable data if necessary and state them clearly.**
5) **Use of non-programmable calculator is allowed.**

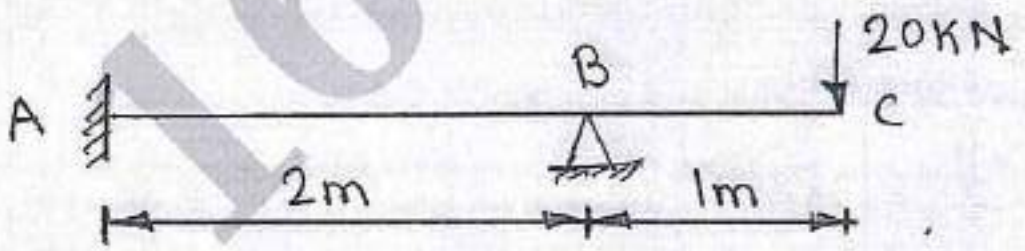
Q1) Write a short Note on the following **[7]**

a. Explain in detail static inderminancy of the structure. **[2]**

b. Explain in detail Clapeyron's theorem of three moments. **[3]**

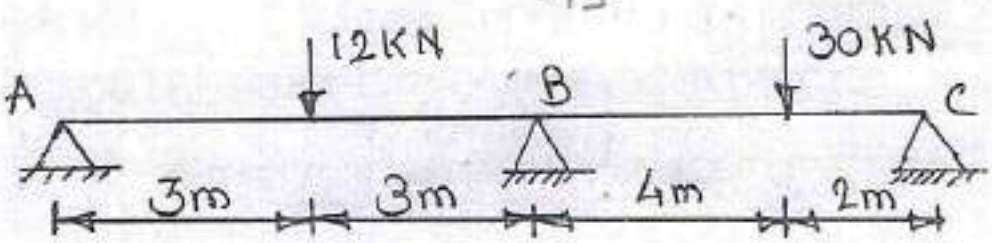
c. What is Unit load method explain in detail. **[2]**

Q2) Analyse the propped cantilever beam loaded as shown in the figure by using Consistent deformation method. Also draw SFD and BMD. **[14]**



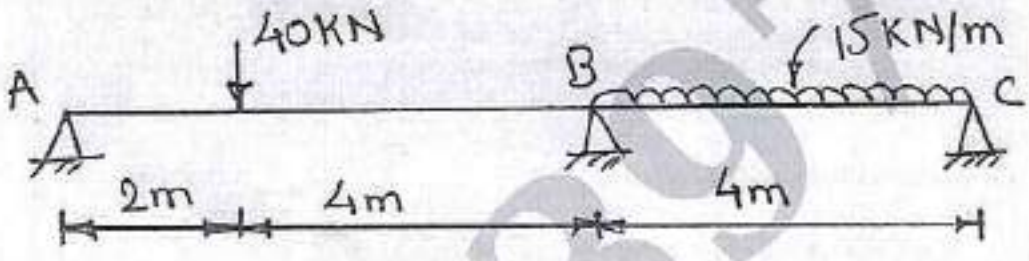
Figure

Q3) A continuous beam ABC is loaded as shown in the figure below. Find out supports moments and reactions by using Clapeyron's theorem of three moments. Also draw BMD. **[14]**



Figure

Q4) A continuous beam ABC is loaded as shown in the figure below. Find out supports moments and reactions by using Castiglione's theorem. Also draw BMD. **[14]**



Figure

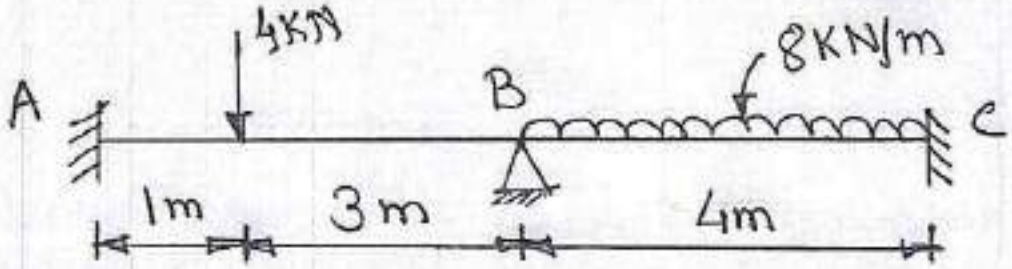
Q5) Write short note on the following **[7]**

a. Explain modified Slope and deflection method in detail. **[2]**

b. Explain distribution factor used in Moment distribution method. **[2]**

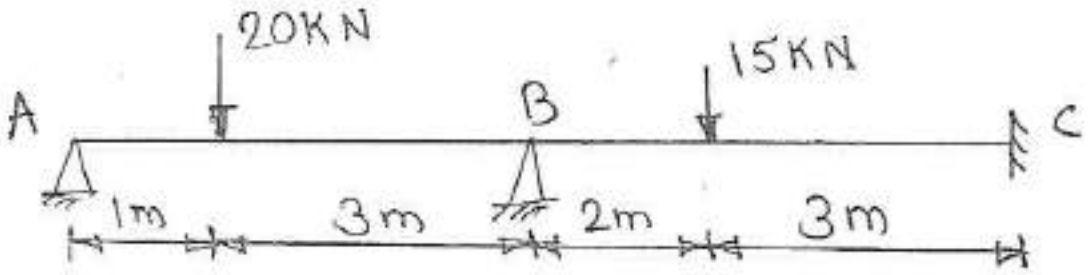
c. Write down properties of stiffness matrix. **[3]**

Q6) A continuous beam is loaded as shown in the figure below. Find out supports moments and reactions by using slope and deflection equation. Also draw BMD. **[14]**



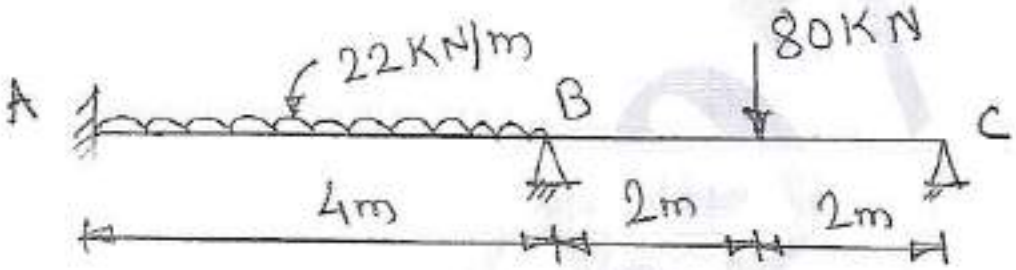
Figure

Q7) A continuous beam ABC is loaded as shown in the figure below. Find out supports moments and reactions by using moment distribution method. Also draw BMD. **[14]**



Figure

Q8) A continuous beam is loaded as shown in the figure below. Find out supports moments and reactions by using stiffness matrix method. Also draw BMD. **[14]**



Figure

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -
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1] (1154) B.Tech. CBCS (81515) Theory of Structures Part 3 SEM 6
2] (101) Bachelor of Engineering (81792) Theory of Structures Part 3 SEM 6
3] (101) Bachelor of Engineering (66873) Theory of Structures Part 3 SEM 6

SZ-01

Total No. of Pages : 2

Seat No	CE- 6th-Sem

51

T.Y. Civil (Semester – VI) (CBCS)
Examination, December– 2025
Geotechnical Engineering - II
Sub. Code: 81518/ 81795 / 66874

Day and Date : Saturday, 13/12/2025 **Total Marks :70**

Time : 10.30 a. m. to 1.00 p.m.

Instructions :
1. **All questions are compulsory.**
2. **Assume suitable data wherever necessary and mention it boldly.**
3. **Draw neat labelled diagram wherever necessary.**
4. **Use of scientific calculator is allowed.**

Q.1) Attempt following questions:

A) Define Percussion Drilling **(05)**

B) Explain : **(06)**

a) Core boxes

b) Core barrel

Q.2) Attempt following questions:

A) Describe Terzaghi's bearing capacity theory. **(06)**

OR

Explain Menard's pressure meter test

B) Determine the ultimate bearing capacity of strip footing, **(06)**
1.20 mt wide and having the depth of foundation 1.0 mt. Use Therzaghi's theory.

Take: $\phi = 35°$; $[\gamma = 18\text{kN/m}^3$ N = 20]; c' 15kN/m^3,

$N_c = 57.8$; $N_q = 41.4$; $N_\gamma = 42.4$.

52

Q.3) Attempt following questions:

A) Describe types of shallow foundations and their criteria of selection. **(06)**

OR

Explain Angular distortion

B) A rectangular footing 2 m × 3 m carries a column load of 600 kN at a depth of 1 mt . The footing rests on C-ϕ soil strata 6 mt thick, having Poisson's ratio of 0.25 and Young's Modulus of Elasticity as 20000kN/m^2. Calculate immediate settlement of footing. **(06)**

Q.4) Attempt following questions:

A) Describe negative skin friction with neat sketch **(06)**

OR

Explain classification of piles.

B) A square concrete pile (30 cm side) and 10 mt long is driven into coarse sand [γ =18.5kN/m^3 N=20]. Determine the allowable load factor of safety = 3.0. **(06)**

Q.5) Answer the following

A) Describe coffer dam with its types. **(05)**

B) Explain sheet piling and material used for sheet piling **(06)**

Q.6) Attempt the following

A) Define Swedish circle method in detail **(06)**

B) A long natural slope in an over consolidated clay [$c' = 10\text{kN/m}^2$, $\phi = 25°, \gamma_{sat} = 20\text{kN/m}^2$] is inclined at 10° to horizontal. The wata table is at surface and seepage is parallel to slope. If a plane slip had developed at a depth 5 mt below the surface, determine its Factor of safety. [$\gamma_\omega = 10\text{kN/m}^3$] **(06)**

QP-10054

Seat No. C.E. 6th Sem 63 Total No. of Pages : 2

OCT-NOV 2025 WINTER EXAMINATION

1154 B.Tech. CBCS

Sub. Name: Engineering Management

Sub. Code: 66875/81516/81793

Day and Date: Monday ,15-12-2025 **Total Marks: 70**

Time: 10:30 AM To 01:00 PM

Instructions:
1. **All questions are compulsory**
2. **Assume suitable data wherever necessary and mention it boldly**
3. **Draw neat labelled diagrams wherever necessary**
4. **Figures to the right indicate full marks**

Q1) Solve the followings. [11]

A. Define organization and explain the types of organization in detail. [6]

B. Explain the importance of planning function in construction management. [5]

Q2) Solve the followings. [12]

A. [7]

Details of activities of a project and their interrelationship are given below: A is starting activity. Activity B follows A. Activities C, E and H succeeds B. C controls activity D. E controls activity F. H controls activity I. Activity G can commence after activity F is over. Activity J can start once activity D and I are over. G and J are the last activities. Draw network, mark critical path and calculate project duration. Also calculate EST, EFT, LST, LFT and Total Float for each activity.

Activity	A	B	C	D	E	F	G	H	I	J
Duration	2	2	3	6	9	12	9	3	4	8

B. Write a short note on - Critical path & Dummy activity [5]
OR
Differentiate between CPM and PERT Network.

Q3) Attempt any Two. [12]

a) Explain step by step how will you determine the probability of completing certain project in scheduled time by using PERT network.

b) Explain concept of precedence network.

c) Explain time estimates in PERT.

Q4) Solve the followings. [12]

A. Explain ABC Analysis concept with neat graph. [6]

B. A construction company uses 1000 cement bags every year for construction [6]

activity. It requires Rs. 170 to place order. Each bag costs Rs. 320. If inventory carrying costs is 20 % of an average inventory investment. Determine EOQ.

Q5) Solve the followings. [12]

A. Explain 'Break Even Analysis' with neat sketch. [6]

B. By using Benefit Cost ratio method, suggest whether following project be accepted or not? Initial investment = Rs. 280000, i = 10% [6]

Year	1	2	3	4
Benefits (Inflows)	50000	80000	100000	150000

Q6) Attempt any Two. [11]

a) Draw a site layout for bridge project.
b) What are the factors considered for site layout?
c) Enlist the advantages of a good site layout.

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -
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1] (101) Bachelor of Engineering (66875) Engineering Management Part 3 SEM 6
2] (101) Bachelor of Engineering (81793) Engineering Management Part 3 SEM 6
3] (1154) B.Tech. CBCS (81516) Engineering Management Part 3 SEM 6

Seat No. CE - 6th - Sem 6th 55

QP-10148

Total No. of Pages : 2

OCT-NOV 2025 WINTER EXAMINATION

1154 B.Tech. CBCS

Sub. Name: Environmental Engineering-II

Sub. Code: 66877/81517/81794

Day and Date: Tuesday ,16-12-2025 **Total Marks: 70**

Time: 10:30 AM To 01:00 PM

Instructions:
1. **All questions are compulsory**
2. **Assume suitable data wherever necessary and mention it boldly**
3. **Draw neat labelled diagrams wherever necessary**
4. **Figures to the right indicate full marks**
5. **Use of Scientific calculator is allowed**

Q1) Attempt the following. **[11]**

a. Explain in detail the characteristics of municipal wastewater and discuss their significance in treatment. **[6]**

b. The 5 day 30 degree celsius BOD of a sewage sample is 110 mg / l. Calculate its 5 days BOD at 20 degree celsius. Assume deoxygenation contact at 20 degree celsius, K20 as 0.1. **[5]**

Q2) Solve any Two Questions. **[12]**

a. Describe the Activated Sludge Process with labelled flow diagram. Explain any four operational problems. **[6]**

b. Explain the primary treatment units: Screening, Grit Chamber, Oil & Grease Trap, PST with their efficiencies. **[6]**

c. Discuss the modifications of ASP with examples. **[6]**

Q3) Solve any Two Questions. **[12]**

a. Explain the process of anaerobic digestion. Describe any two types of anaerobic digesters. **[6]**

b. Discuss the design and operation of oxidation pond. **[6]**

c. Write short notes on: **[6]**
i. Septic tank
ii. Types of reactors

Q4) Solve any Two Questions. **[12]**

a. Describe self-purification of streams and draw the DO sag curve. [6]

b. Explain the concept of EIA. [6]

c. State any 6 MPCB standards for effluent disposal into land and surface water. [6]

Q5) Solve any Two Questions. [12]

a. Define solid waste. Describe sources, types and characteristics of municipal solid waste. [6]

b. Explain composting and incineration with diagrams. [6]

c. Discuss the functional elements of solid waste management. [6]

Q6) Attempt the following. [11]

a. Explain the working of cyclonic separator and ESP for air pollution control. [6]

b. Describe the steps in EIA report preparation.. [5]

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -
This Question Paper may be distributed for following Subjects as common code.
सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (101) Bachelor of Engineering (66877) Environmental Engineering-II Part 3 SEM 6
2] (101) Bachelor of Engineering (81794) Environmental Engineering-II Part 3 SEM 6
3] (1154) B.Tech. CBCS (81517) Environmental Engineering-II Part 3 SEM 6

QP-10259

Seat No. CE - 6th Sem 57

Total No. of Pages : 2

OCT-NOV 2025 WINTER EXAMINATION

1154 B.Tech. CBCS

Sub. Name: Soil and Water Conservation Techniques

Sub. Code: 81519/81796

Day and Date: Thursday ,18-12-2025 **Total Marks: 70**

Time: 10:30 AM To 01:00 PM

Instructions: 1. All questions are compulsory
2. Draw neat labelled diagrams wherever necessary
3. Figures to the right indicate full marks

Q1) Attempt all questions. [11]

a) What are the types of soil erosion? Explain any one.

b) What are the factors affecting soil erosion?

Q2) Attempt any two. [12]

a) Enlist classification of gullies and Explain in details.

b) Short note - Maintenance of bunding.

c) Illustrate bench terracing.

Q3) Attempt any two. [12]

a) Explain process of stream bank erosion.

b) What are the Objectives of river training works.

c) Explain causes of stream bank erosion.

Q4) Attempt all questions. [11]

a) Explain the importance of water harvesting.

b) Short note - nala bund.

Q5) Attempt any two. [12]

a) Explain benefits of watershed modeling.

b) Differentiate between physically based models and empirical models.

c) Classify watershed models based on nature of the algorithms.

Q6) Attempt any two. [12]

a) Note on sources of ground water.

b) Enlist ground water conservation techniques and explain any one in detail.

c) Elaborate effects of ground water depletion.

End Of Question Paper

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