CIVIL ENGINEERING TECHNICIAN

II YEAR, PAPER I

Water Supply Engineering

TIME: 3 Hours **Max. Marks: 50**

SECTION-A

Note : (i) Answer all the questions.
(ii) Each question carries two marks **10×2=20**

1. Define wholesome water
2. Name any four water-borne diseases.
3. Define sedimentation.
4. Define pre-chlorination.
5. List any two advantages of P.V.C pipes.
6. List any three types of pipe materials used as water mains.
7. Name any four types of valves.
8. What are the purposes of 'stop cock'?
9. What is water hammer?
10. What is capillarity?

SECTION-B

Note : (i) Answer any 5 questions.
(ii) Each question carries 6 marks **5×6=30**

11. Mention and discuss the factors that influence per capita demand.
12. Explain the classification of wells.
13. Explain the different characteristics of water.
14. Explain slow sand filter with a neat sketch.
15. Draw the neat sketch of centrifugal pump and explain operation.
16. Write short notes on the following
    a. Fire hydrants b. Air valves
17. Draw the neat sketch of underground reservoir and explain.
18. Describe any three losses of head in pipes.

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CIVIL ENGINEERING TECHNICIAN

II YEAR, PAPER II

PART-B, Estimating and Costing

TIME: 3 Hours **Max. Marks: 50**

SECTION-A

Note : (i) Answer all the questions.
(ii) Each question carries two marks **10×2=20**

1. Write the Units of Measurements For
   A. Earth Work B. Plastering
2. Write the Abstract Estimate Format
3. Estimate the Quantity of Brick Work for A Wall of Length 5 Mt Width 20 Cm and Height 2.8 Mt
4. Write the Centre Line Method for A Single Room Taking Quantities.
5. Write the Specification for Plastering
6. Define Lead and Lift.
7. Estimate the Quantity of Cement, Sand Required for Cm (1:8) For 1 Cum
8. A Cave Is in Cutting and Has A Width Of 4 Mt At Bottom. If the Depth of Cutting Is 2.0 M and Side Slopes 1.5.1. Find the Area of Cross Section.
9. Write the Trapezoidal Formula for Calculation of Earth Work.
10. Write Any 4 Component Parts of a Fixed Septic Tank.

SECTION-B

Note : (i) Answer any five of the following.
(ii) Each question carries six marks **5×6=30**

11. Prepare on Approximate Estimate of The Building with A Plinth Area Of 1600 Sqm With the Following Data.
    1. Plinth Area Rate 3000/ Sqm
    2. Add for Architectural Work 2.5%Of the Cost.
    3. Add for Water Supply and Sanitary Installation 5% Of the Cost
    4. Contingencies 3% of the Cost.
    5. Super Vision Charges 2% Of the Cost

12. Estimate the Quantities of The Following Items of A Given Two Room Building Shown In Figure

    A. Earth Work Excavation B. Flooring

13. Calculate the Quantities Of The Following Items By Centre Line Method For The Building Shown In Figure

    A. Brick Work in Super Structure B. Cc Bed

14. Estimate the Quantities of the Following Items of Work for Compound Wall 70m Length, 30cm Width And 2 Mt height.

    A. Brick Work in Cm (1:4) Above Plinth B. Plastering Work

15. Estimate the Materials Required For

    A. CC (1:2:4) B. Brick Work Cm (1:1:5:3)

16. Calculate the Rate Of CC (1:2:4) Of 1 Cum Take 10 Cum. Assume The Rates Of Materials And Labour

17. The Ground Levels along Centre Line of A Road All Given Below.

Chain age In Mt	0	50	100	150
R1 Of Ground	97	96.5	96	97.5

    The Road Is to Be Formed in Embankment with The Formation Level At 100.00 M Throughout the Length. If the Width of The Road Is 10.00 M and The Side Slopes 2:1. Calculate the Quantity of Earth Work Required By

    1) Trapezoidal 2) Prisamoidal Rule.

    Assume the Transverse Slope as Level.

18. Prepare the Detail Estimate for The Cement Concrete Road Of 1.0KM Length for The Following Items of Work As Shown In Figure

    A. Wearing Coat CC (1:2:4) With 20mm Size HBG Metal 100mm Thick

    B. Base Course CC (1:4:8) With 40mm Size HBG Metal 150mm Thick

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CIVIL ENGINEERING TECHNICIAN

II YEAR - PAPER III

PART-B, Highways and Construction Management

TIME: 3 Hours **Max. Marks: 50**

SECTION-A

Note : (i) Answer all the questions.
(ii) Each question carries two marks **10×2=20**

1. State any four advantages of roads.
2. Write any three objects of reconnaissance survey.
3. What are the objects of traffic signs?
4. Write the materials used in the construction of WBM road.
5. Write the stages in construction.
6. Define contract planning.
7. Write the types of labour.
8. Define quality control
9. Define contract.
10. Define work order.

SECTION-B

Note : (i) Answer any five of the following.
(ii) Each question carries six marks **5×6=30**

11. Explain the functions of the component Parts of Road Structure with sketch
12. Explain the Different Junctions with Sketches
13. Explain the steps Involved in the Construction of Cement Concrete Roads.
14. What is meant By Seal Coat and Write Three Functions of Providing It.?
15. What are the Methods of Scheduling? Explain Them Briefly.
16. Write Short Notes On
    A. Minimum Wage Act B. Contract Labour Act
17. Explain Various Types of Contracts.
18. Write Short Notes On
    A. Work Order. B. Tender Notice.

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