

MODEL QUESTION PAPERS
PUBLIC HEALTH
ENGINEERING
TECHNICIAN

**PUBLIC HEALTH ENGINEERING
WATER SUPPLY ENGINEERING
THEORY - FIRST YEAR PAPER - I**

Time : 3 Hours

Max. Marks : 50

Section - A

Note : (i) Answer all the Questions

(ii) Each Question carries 2 marks

2 x 10 = 20

1. Define wholesome water
2. What is hydrological cycle?
3. Name the sub-surface sources
4. What are the domestic needs of water?
5. Name any four water borne diseases.
6. What is disinfection of water?
7. Where are the advantages of G.I. Pipes?
8. What is the purpose of reflux valve?
9. What is the use of air valves?
10. What is meant by water hammer?

Section - B

Note : (i) Answer five Questions

(ii) Each Question carries 6 marks

5 x 6 = 30

11. Explain the surface sources of water briefly
12. Explain briefly the various demands of water.
13. What are the factors affecting per capita demand?
14. What are chemical tests to be conducted to the water? Explain briefly.
15. Explain slow sand filter with neat sketch.
16. Explain with neat sketch the operation of centrifugal pump
17. Explain the following
 - a) Water Meters
 - b) Fire hydrants
18. Draw a layout from small service reservoir with inlet and outlet valves.

PUBLIC HEALTH ENGINEERING
SURVEYING THEORY
THEORY - PAPER II FIRST YEAR

Time : 3 Hours

Max. Marks : 50

Section - A

Note : (i) Answer all the Questions

(ii) Each Question carries 2 marks 2 x 10 = 20

1. Define Reconnaissance
2. Define Ranging
3. Define Baseline
4. Draw the Conventional Signs for
a) Pond b) Road
5. What is Bearing
6. Define Magnetic Declination
7. What is Orientation of Plain table?
8. Define Levelling
9. What is a change point?
10. What is Face Left Observation?

Section - B

Note : (i) Answer five Questions

(ii) Each Question carries 6 marks 5 x 6 = 30

11. a) Write Classification of surveying based on instruments
b) Explain Indirect Ranging
12. Explain different obstacles in chain surveying
13. The following fore bearings were observed in a closed compass traverse ABCD conducted in clockwise direction. Calculate included angles. Apply check.

Line	F.B
AB	47°30'
BC	128°15'
CD	200°00'
DA	298°15'

14. The Following fore and back bearings were observed in a closed traverse ABCDA. Where local attraction is suspected. Detect the local attraction and correct the bearings for local attraction.

Line	F.B.	B.B
AB	45°20'	222°20'
BC	119°30'	298°30'
CD	226°45'	46°15'
DA	310°30'	130°00'

15. Write the methods of plane tabling and Explain radiation method of plane tabling.
16. Explain the various types of levelling staves used in levelling
17. The following readings were taken successively with a dumpy level :
- 2.225, 1.605, 0.980, 2.090, 2.865, 1.265, 0.600, 1.980, 1.045 and 2.685m. The instrument has been shifted after third, sixth and eighth readings. Enter the readings in a page of level book and calculate the R.L. of points by Rise and fall method. The first reading was on bench mark of R.L. 400.300 m
18. Draw the neat sketch of Transit Theodolite and identify the component parts.

**PUBLIC HEALTH ENGINEERING
ENGINEERING MECHANICS
THEORY - PAPER III FIRST YEAR**

Section - A

Note : (i) Answer all the Questions
(ii) Each Question carries 2 marks 10 x 2 = 20

1. Distinguish between base and derived units
2. Define : a) Force, b) Vector
3. Define moment of a force and mention the types of moments
4. Define centroid
5. State the portion of centroid with a neat sketch for
a) Rectangle b) Triangle
6. Define Radius of gyration
7. Define Centroid
8. State the relationships between elastic constants
9. Mention the types of beams
10. Define point of contra flexure

Section - A

Note : (i) Answer any 5 Questions
(ii) Each Question carries 6 marks 5 x 6 = 30

11. a) Find the resultant of two forces acting at a point by law of parallelogram of forces.
b) Two forces 30N and 50N acting at 90° to each other. Calculate the resultant of forces
12. Determine the position of centroid of an unequal angle section of size 400 x 250 x 25 mm.
The Sketch is shown in Fig - A.

13. Find the polar M.I. for a hollow circular shaft section of outer diameter 40 mm and inner diameter 35 mm. Calculate K_{zz}
14. A circular bar of 20 mm diameter, 200 mm long was tested in tension. The increase in its length was found to be 1.5 mm while the decrease in its diameter was 0.03 mm. Calculate the longitudinal strain, lateral strain, Poisson's ratio.
15. A 40 mm diameter metal bar carrying a load of 210 kN extended by 0.032 mm on a gauge length of 200 mm. The contraction in diameter was 0.0024 mm. Calculate the elastic constants.
16. A cantilever 6 m long carries point loads of 40, 20 and 30 N at a distance of 2, 5, and 6 m from fixed end respectively. Sketch SFD and BMD. Find the Max. B.M. and S.F.
17. A simply supported beam 6 m span is subjected to an U.D.L. of 20 N/m. Draw SFD & BMD. State the maximum values of S.F. and B.M.
18. A simple supported beam 8 m span is subjected to an U.D.L. of 25 N/m at center for a length of 3 m. Two point loads of 30 N are acting at a distance of 2 m from both ends. Draw SFD and BMD.

**PUBLIC HEALTH ENGINEERING
ENVIRONMENTAL ENGINEERING
THEORY - SECOND YEAR PAPER - I**

Time : 3 Hours

Max. Marks : 50

Section - A

- Note :** (i) Answer all the Questions
(ii) Each Question carries 2 marks 2 x 10 = 20
1. Define Sewage
 2. Name the different materials used for sewer?
 3. What is the function of man hole?
 4. Define B.O.D.
 5. What is the purpose of Grit Chamber?
 6. What are the sources of solid waste?
 7. What is the purpose of disinfection of wells in rural water supply?
 8. What is air pollution?
 9. Name any four air pollution control equipments?
 10. Define Ecology.

Section - B

- Note :** (i) Answer five Questions
(ii) Each Question carries 6 marks 5 x 6 = 30
11. Explain different systems of sewage disposal
 12. Explain the laying of sewer
 13. Explain brief description, location and function of
a) Street inlets b) Flushing tanks
 14. Write the characteristics of sewage
 15. Explain the following
a) Trickling filter b) Oxidation pond
 16. Explain the disposal of solid waste by composting
 17. What are the sources and effects of air pollution
 18. Explain about Rural sanitation

**PUBLIC HEALTH ENGINEERING
BUILDING MATERIALS AND CONSTRUCTION
THEORY - SECOND YEAR PAPER - II**

Time : 3 Hours

Max. Marks : 50

Section - A

Note : (i) Answer all the Questions

(ii) Each Question carries 2 marks

2 x 10 = 20

1. Name any four important stones used in building construction
2. Write the composition of ordinary cement
3. What is meant by bulking of sand?
4. What is the purpose of curing of concrete?
5. What are the uses of aluminium?
6. What is the purpose of seasoning of timber?
7. What is shallow foundation?
8. Name important tools used in stone masonry?
9. Name any four important bonds used in brick work?
10. Name important materials used for flooring

Section - B

Note : (i) Answer five Questions

(ii) Each Question carries 6 marks

5 x 6 = 30

11. Explain the classification of rocks
12. Write the qualities of good bricks
13. Name different types of mortars. Explain how cement mortar is prepared?
14. Explain the following :
a) Uses of Cast Iron b) Asbestos
15. What are the materials required for stone masonry? Explain with neat sketch coursed rubble masonry
16. Explain the construction of cement concrete floor.
17. Name different types of cement used in construction and uses of each cement
18. What are the requirements of well planned roof? Explain pitched roof and Flat roof.

PUBLIC HEALTH ENGINEERING
ESTIMATING AND COSTING
THEORY - SECOND YEAR PAPER - III

Time : 3 Hours

Max. Marks : 50

Section - A

Note : (i) Answer all the Questions

(ii) Each Question carries 2 marks

2 x 10 = 20

1. Defin Estimation
2. Name the units of estimation of the following :
a) Earthwork in excavation b) Plastering
3. Define Revised estimate
4. Name the methods of building estimate
5. Define Lead and Left
6. Name any four water supply and sanitary estimates
7. Calculate the number of bricks in the compoundwall of
12m x 0.3m x 2m
8. What is the use of S.S.R. Book?
9. Define plinth area estimate
10. Write the format of abstract estimate

Section - B

Note : (i) Answer five Questions

(ii) Each Question carries 6 marks

5 x 6 = 30

11. Explain the importance of estimating and costing to civil engineer?
12. Explain different types of estimates
13. Calculate the following quantities from the figure no.1.
a) Earth work in excavation
b) Cement Concrete in foundation
c) D.P.C.

14. Calculate the following quantities from the figure no. 2
 - a) Earthwork in excavation
 - b) Cement concrete in foundation
 - c) Brickwork in walls
15. Calculate the following quantities from the figure no. 3
 - a) Cement Concrete in foundation
 - b) Brickwork in walls
 - c) C.C in Slab
16. Calculate the 1cu.m rate of CC 1:2:4 take 10cu.m cement concrete
17. Explain about rate of analysis
18. Calculate the following quantities from the figure no.4
 - a) Cement concrete in tracks
 - b) Rammed kankar in between tracks
 - c) Rammed Kankar below CC tracks

XIV. EQUIVALENCE OR EQUIVALENCY OF SUBJECT

FIRST YEAR

Restructured Course	:	V-2005 Curriculum
1. Surveying (Theory Paper-I)	:	Surveying (Theory PaperII)
2. Environmental Chemistry (Theory Paper - II)		
3. Water Supply Engineering (Theory Paper - III)		Water Supply Engineering (Theory Paper - I)
4. Maths & Computer skills		

SECOND YEAR

Restructured Course	:	V-2005 Curriculum
1. Waste Water treatment & disposal (Theory Paper - I)		Environmental Engineering (Theory Paper - I)
2. Airquality & Solid Waste Management (Theory Paper- II)		
3. Construction Materials (Theory Paper - III)		
4. Estimating and Costing (Theory Paper IV)		Estimating & Costing (Theory Paper - III)

XV. List of Participants :

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