

MIZORAM PUBLIC SERVICE COMMISSION

**DEPARTMENTAL EXAMINATIONS FOR JUNIOR ENGINEER AND DRAFTMAN-I
UNDER PUBLIC HEALTH ENGINEERING DEPARTMENT,
GOVERNMENT OF MIZORAM. MARCH -2020.**

**ENGINEERING PAPER - I
(Common for all Branches of Engineering)**

Time Allowed : 3 hours

FM : 100 PM : 40

Marks for each question is indicated against it.

Directions (Questions No. 1 - 30) : Choose the Correct answer in the following : (1×30=30)

1. The recommended per capita water supply levels for Villages 55 Lpcd / 43Lpcd / 45Lpcd.
2. The Mass per unit Volume of Water is 1000.00Kg./m³, 100Kg./m³, 10Kg./m³.
3. Water is freezing at 10⁰C / 4⁰C / 0⁰C.
4. The weight of Cement in One cubic meter is 45Kg. / 50Kg. / 1000Kg.
5. 1 (One) Gallon of Water is equal to 4.54 Litres / 3.79 Litres / 4.50 Litres
6. Contour lines Close somewhere / Cross each other / are uniformly spaced.
7. Which is the most correct estimate cube rate estimate / plinth area estimate / detailed estimate
8. A layer of dry bricks put below the foundation concrete, in the case of soft soils, is called Shoring / D.P.C. / Soling.
9. Cement Concrete 1 : 1½ : 3 mix is equal to M-25 / M-30 / M-20 grade of concrete approximates.
10. Cement Concrete 1 : 2 : 4 mix is equal to M-25 / M-30 / M-15 grade of concrete approximates.
11. Water is boiling at 90⁰C / 100⁰C / 101⁰C.
12. The moving part of a centrifugal pump is Impeller / Suction nozzle / Stator.
13. The number of standard modular bricks (IS) required to make 1m³ of masonry is 500 / 495 / 540.
14. Units of turbidity are mg / l / potassium chloroplatimate units / NTU.
15. Manning formula is use to determine flow in open channel / Head loss due to friction is pies / Head loss in open channel.
16. Plinth area for Type-I Quarter is 34.00M² / 37.00M² / 33.00M².
17. The weight of 20mm Ø G.I. Pipe (M) i/c screwed & socketed in kg/m is 1.75 / 1.57 / 1.87.
18. The weight of 40mm G.I. Pipe (M) i/c screwed & socketed in kg/m is 3.70 / 3.60 / 3.90.
19. The weight of 150mm G.I. Pipe (M) i/c screwed & socketed in kg/m is 19.90 / 19.50 / 19.20.

20. When the source of water is a reservoir on a mountain and the town is lowest then the system of distribution is **Gravity system / Pumping System / Combined Gravity & Pumping.**
21. The weight of 10mm Reinforcement bars of Kg/Rm is **0.67 / 0.62 / 0.69.**
22. The weight of 12mm Reinforcement bars of Kg/Rm is **0.87 / 0.84 / 0.89.**
23. The weight of 16mm Reinforcement bars of Kg/Rm is **1.58 / 1.85 / 1.78.**
24. The value acceleration due to gravity in MKS unit is **9.91 / 9.81 / 10.**
25. In a rectangle having sides 'L' and 'B', the Area is given by **L + B / L x B / 2(LxB).**
26. If a population of a Town is 5 lakhs and average water consumption is 70 Lpcd, then capacity of the reservoir should be **80 mld. / 70 mld. / 35 mld.**
27. In a gravity scheme. The source of water to Service Reservoir Pipe line is called **Distribution Line / Feeding Line / Gravity Main Line.**
28. 1 (One) megawatt is **1000 Watts / 1000Kilowatt / 100 Kilowatt.**
29. Riser pipe of Mark-III Handpump Tube well is **32mm / 40mm / 65mm.**
30. C-Wrench Pipe lifter is associated with **Pipeline / Handpump Tube well / Pumping System.**

Direction (Questions No. 31 - 50) : Fill in the blanks for the following statements : (2×20=40)

31. Write the full form of "GST"
32. Write the full form of "SOR"
33. Write the full form of "A/A"
34. Write the full form of "E/S"
35. Write the full form of "T/S"
36. Write the full form of "VT "Pump"
37. Write the full form of "KVA"
38. Write the full form of "T&P"
39. Write the full form of "KWH"
40. Write the full form of "IHHL"
41. Write the full form of "SLWM"
42. Write full form of "NIT"
43. Write full form of "RPM"
44. Write full form of G.I. Pipe
45. Write full form of D.I. Pipe
46. Write full form of HPTW
47. Write full form of RL in surveying
48. The recommended Private House Water Connection size of G.I. Pipe is (in mm)

49. Accumulation of air in pipeline release through
50. What is the percentage provided for framing of plinth area rate estimate of Assam Type Building for internal Water Supply and Sanitary Installation.

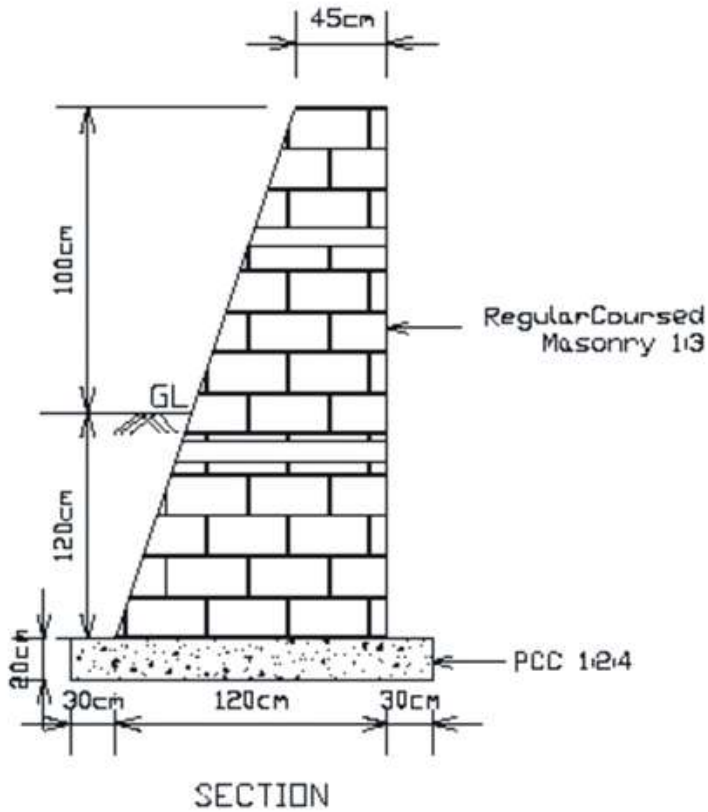
Direction (Questions No. 51 - 60) : Write 'T' for True or 'F' for False for following: (1×10=10)

51. Most commonly coagulant used in pumping water supply scheme of Mizoram is PAC.
52. Great advantage of slow sand filter is that it requires less space than Rapid Sand Filter.
53. Chlorination is a method of disinfection of drinking water.
54. Rain Water Harvesting simply involves the collection of water from surfaces in which rain falls & subsequently storing this water for later use.
55. SBM-G is Swachh Bharat Mission-Gramin.
56. pH value of Drinking Water less than 7 is high Alkaline.
57. Hardness of Water cause corrosion & incrustation of pipes & plumbing fixtures.
58. The consumer shall be responsible for the safe custody against loss, damage or tempering of water meter.
59. Casual Water Connection may be provided for more than one month.
60. All drinking water supplies through Truck Carriage Operated by Private Party must be disinfected by adding bleaching powder etc.

Direction (Questions No. 61 - 64) : Choose the right answer : (2×4=8)

61. What is full form of TMT bars ?
- | | |
|----------------------------|---------------------------------|
| (a) Thermo Modified Tester | (b) Thermo Mechanically Treated |
| (c) Thermo Mechanic Tested | (d) Thermo Mechanically Twited |
62. Seasoning of Timber in the process of -
- | | |
|-----------------------|--------------------------|
| (a) Burning of Timber | (b) Adding Preservations |
| (c) Removing Water | (d) Painting Timber |
63. Clearing of Rapid Sand Filters is done by –
- | | |
|---|------------------|
| (a) Scrapping the top layer of filter media | (b) Backwashing |
| (c) Providing new sand layer | (d) All of above |
64. Most widely used Cement in Mizoram is –
- | | |
|-------------------------------|------------------------------|
| (a) White Cement | (b) Ordinary Portland Cement |
| (c) Portland Pozzolana Cement | (d) Rapid Hardening Cement |

65. What factor to be consider for selection of site for construction of intake in Rural Water Supply Scheme? (4)
66. Draw flow diagram of pumping water supply scheme. (5)
67. Taking length of the following stone masonry retaining wall as 10 metre. Estimate the cost of PCC @ Rs. 7000/m³. (3)



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