Cien.1101   Basic Civil Engineering (2+1)   **Marks: 50**
Time: 2 hours

I   **Fill in the blanks:**   **(10x1=10)**

1   The portion of the structure immediately above the ground and between the surface of the floor and the surrounding ground is known as ....

2   The branch of surveying in which the curvature of earth is taken into consideration is known as............

3   Jar test is used in water treatment plants in order to determine the ....

Define the Following

4   What is the minimum initial setting time required for ordinary Portland cement?

5   Name the two methods of plane table surveying?

6   Give any four nominal mixes of concrete?

7   What is the use of anallatic lenses in tacheometer?

8   Define safe bearing capacity of soil?

9   What is meant by disinfection?

10 List out different methods for sludge disposal?

II   **Write Short notes on any FIVE of the following**   **(5x2=10)**

1   What are the qualities of good brick?

2   What are basic principles of surveying?

3   Distinguish between substructure and superstructure of a building?

4   Convert the following whole circle bearing into reduced bearing systems.
    (i) 33° 20'   (ii) 157°30'   (iii) 221°40'   (iv) 303° 0'

5   Give the breakup of various domestic water demands in general?

6   What is meant by sedimentation aided with flocculation?

7   What are the methods for the collection and conveyance of refuse?

III   **Answer any FIVE of the following.**   **(5x4=20)**

1   What are the physical and engineering properties of cement?

2   What are the properties of fresh and hardened concrete?

3   A 20m chain was found to be 10cm too long after chaining a distance of 1500m. It was found to be 18cm too long at the end of day's work after chaining a total distance of 2900m. Find the true distance if the chain was correct before the commencement of the work?

4   What are the advantages and disadvantages of plane table surveying?

5   What are the various methods for area and volume calculation?

6   Sketch and explain the functioning of a septic tank?

7   What are the characteristics of sewage?

IV   **Write an essay on any ONE of the following**   **(1x10=10)**

1   What are the various steps in water treatment? Explain with neat sketches and a flow chart?

2   The following observations were made in a leveling work. 0.355, 0.550, 0.860, 1.650, 1.785, 1.955, 1.750, 0.815, 0.650 and 1.535. The positions of instruments were changed after the third, fifth and eighth readings. Open a field level book and enter the readings. Compute the reduced levels of all the points by rise and fall method. The first reading was taken on a bench mark of R.L. 105.00. Apply arithmetic checks also.

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