

GANPAT UNIVERSITY**B. Tech. Semester: V Civil Engineering****Regular Examination November – December -2014****Subject: 2CI-506 Building Services****Time: 3 Hours****Total Marks: 70****Instruction: (1) Answer to the two sections must be written in separate answer books.****(2) Figures to the right indicate full marks.****(3) Assume suitable data if required.****Section - I**

- Que. – 1 A Write a detail notes on sanitary fittings. 06
 B Discuss dead end method of layout of distribution pipes with neat sketch. 06

OR

- Que. – 1 A Discuss water requirements for buildings other than residences. 06
 B What is a trap? Explain the types of traps. 06

- Que. – 2 A Discuss preventive measure for control of wastage of water 05
 B Enlist plumbing tools and explain any three with neat sketch 06

OR

- Que. – 2 A Write short notes on water hammer in pipes. 05
 B Derive the equation for total pressure when vertical plane surface submerged in liquid. 06

Que. – 3 Answer the following

- A Design a septic tank for a small residential colony having a population of 600 persons. The rate of water supply is 135 liters per day. What would be the size of soak well if the effluent from the septic tank is to be discharged in it? Assume that the 95% quantity of water appears as sewage 06
 B A rectangular plane surface is 3 m wide and 4 m deep. It lies in vertical plane in water. Determine the total pressure and position of center of pressure when its upper edge is horizontal and (A) coincides with water surface (B) 3 m below the free water surface. 06

Section – II

- Que. – 4 A An Illumination of 50 lux is to be produced on the floor of room $12\text{ m} \times 9\text{ m}$. 36 lamps are required to produce this illumination in the room. Calculate the luminous flux produced also show the lighting design layout. Assume coefficient of utilization is to be 0.5, depreciation factor 1.25. Spacing to H_m ratio is 1.5 and mounting height is 4.5m. 06
- B Write the types of lights with principles of good lighting. Also explain CFL. 06

OR

- Que. – 4 A A production area in a factory measures 60 metres x 24 metres. Find the number of lamps required if each lamp has a Lighting Design Lumen (LDL) output of 18,000 lumens. The illumination required for the factory area is 200 lux. Utilization factor = 0.4. Lamp Maintenance Factor = 0.75. Prepare the lighting design layout. Spacing to mounting height ratio is 3:2 and mounting height is 4 m. 06
- B Write a short note on fuse include its functions, advantages, disadvantages and its types. 06

- Que. – 5 A Explain briefly the procedure adopted for Laying and Testing of Sewers. 04
- B Define the terms: Light, Luminous intensity, Luminous Flux, Illuminance. 04
- C What is green building? 03

OR

- Que. – 5 A What do you mean by Appurtenances? Explain Sluice and Air valve with figure. 04
- B Write a detail note on HID lamps 04
- C Why building services are necessary? Write various building services provided in a building. 03

- Que. – 6 Answer the following
- A Which gases are responsible for house hold fire hazard? Write effects of fire. 04
- B Explain Cast Iron and Cement Concrete pipe with advantages and disadvantages. 04
- C Define the terms: Heating, Cooling, Humidification and Dehumidification 04

END OF PAPER