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**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_\_

**End Semester Examination – Nov/Dec - 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **12CE226** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **SANITARY ENGINEERING** | **Max. marks :** | **100** |

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| --- | --- | --- | --- | --- | --- |
| **Q. No.** | | **Questions** | | **Marks** | |
| **PART-A(10X1=10 MARKS)** | | | | | |
| 1. | | List the types of wastes. | | 1 | |
| 2. | | Expand DWF. | | 1 | |
| 3. | | List the types of collection systems. | | 1 | |
| 4. | | List the materials used for sewers. | | 1 | |
| 5. | | What are the types of unit operations? | | 1 | |
| 6. | | What is ASP? | | 1 | |
| 7. | | What do you understand by the term ‘digestion of sludge’? | | 1 | |
| 8. | | What is self purification? | | 1 | |
| 9. | | What is soil pipe? | | 1 | |
| 10. | | What is vent pipe? | | 1 | |
| **PART B(5 X 3= 15 MARKS)** | | | | | |
| 11. | | Define the term sewer. | | 3 | |
| 12. | | Enumerate various appurtenances commonly used sewer system. | | 3 | |
| 13. | | What do you understand by sedimentation? | | 3 | |
| 14. | | What is sewage sickness? | | 3 | |
| 15. | | List various principle systems of plumbing for a drainage of building. | | 3 | |
| **PART C(5 X 15= 75 MARKS)** | | | | |
| 16. |  | | List various empirical formulae for determining storm water flow in sewers and explain their applicability. | 15 |
| (OR) | | | | |
| 17. |  | | Summarise various constituents of wastewater and its characteristics. | 15 |
| 18. |  | | Describe with sketches various types of joints used in sewer lines. | 15 |
| (OR) | | | | |
| 19. |  | | Discuss the procedure for laying and testing of sewers. | 15 |
| 20. | a. | | Write a short note on skimming tank. | 5 |
| b. | | Design a primary settling tank of rectangular shape for a town having a population of 50,000 with a water supply of 180 lpcd. | 10 |
| (OR) | | | | |
| 21. |  | | State the working principle of trickling with neat sketch. | 15 |
| 22. |  | | List and explain sewage disposal methods. | 15 |
| (OR) | | | | |
| 23. | a. | | Write a short note on sludge conditioning and dewatering. | 10 |
| b. | | Write a short note on stabilization bond. | 5 |
| 24. |  | | Explain with the help of diagrams various systems of plumbing used for house drainage. | 15 |
| (OR) | | | | |
| 25. |  | | Construct and explain a typical house drainage plan of residential building. | 15 |