QP Code: RD21BTECH351 | Reg. No | | | | | | | | | | | AY 21

GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Fifth Semester Regular) Examinations, December – 2023

21BAGES25007 – Drainage Engineering

(AGE)

Time: 3 hrs | Maximum: 70 Marks

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a. What are the Factors affecting water logging and causes of water logging?	CO1	L2
b. What are the adverse effect of water logging in agricultural field?	CO1	L2
c. Define Land Grading and Land Smoothing. Also enlist various types of surface drainage system.	CO2	L2
d. Enlist the types of outlets for pipe drainage system.	CO3	L2
e. What do you understand by the Artesian Relief Wells?	CO4	L2

PART – B **(15 x 4 = 60 Marks)**

Answer ***ALL*** questions	Marks	CO #	Blooms Level
2. a. Write about the components in designing the surface drainage system.	7	CO1	L2
b. Explain the methods for estimation of hydraulic conductivity.	8	CO1	L3
(OR)			
c. Define drainage and write its objective and discuss about the drainage problems in India.	7	CO1	L4
d. Define water logging, List and explain the causes and impact of water logging.	8	CO1	L2
3.a. Explain the purpose and benefits of subsurface drainage system	7	CO2	L3
b. What are the different component of pipe drainage system? Write the functions of each component in details.	8	CO2	L3
(OR)			
c. Explain drainage design criteria.	7	CO2	L2
d. What are different methods to determine the hydraulic conductivity of soil in the laboratory? Explain any one method in details	8	CO2	L3
4.a. What do mean by leaching requirement. Write the equation of leaching requirement	7	CO3	L2
b. Define subsurface drainage and write the specific benefits of sub surface drainage.	8	CO3	L2
(OR)			
c. Write a short note on drain Envelopes in tile drainage system.	7	CO3	L3
d. What is steady state drainage? Enlist various equations for steady state drainage condition.	8	CO3	L3
5.a. Explain the Investigation of drain design parameters through drain testing.	7	CO4	L3

b.	Explain in detail the reclamation of saline and alkaline soils	8	CO4	L3
	(OR)			
c.	Explain bio drainage and mole drainage. Discuss conjunctive use of saline and fresh water	7	CO4	L3
d.	Explain in detail the operation and maintenance of tile drains	8	CO4	L3

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