M.E. Second Semester (Civil (Environmental Engineering)) (P.T.) (CGS)

13389 : Watershed Management : 2 SCEE 1

P. Pages : 2 | AU - 3213

Time : Three Hours | Max. Marks : 80

Notes :
1. All question carry as indicated marks.
2. Answer **three** question from Section A and **three** question from Section B.
3. Due credit will be given to neatness and adequate dimensions.
4. Assume suitable data wherever necessary.
5. Illustrate your answer necessary with the help of neat sketches.
6. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION – A

1. a) What is hydrologic cycle? Explain with a neat sketch an engineering representation of hydrologic cycle. **7**

b) Explain the importance of water storage in watershed. **7**

2. a) What is energy budget? Explain with a neat sketch the average annual energy budget for the earth. **7**

b) Explain the role of water in energy sphere. **6**

3. a) Describe the water budget method for estimating evapotranspiration. **7**

b) What is secondary interception? Compare interception loss and interception storage. **6**

4. a) Why statistical and probability knowledge is important in hydrology? Explain briefly. **6**

b) Explain plotting distribution method to predict the value of rainfall at different return periods. **7**

5. a) Describe the procedure of the derivation of a unit hydrograph from an isolated storm. **6**

b) The 6-h unit hydrograph of a catchment is in the form of a triangle with the peak of 100 m^3/s occurring at 24h from the start. The base is 72 h. **7**

i) What is the area of the catchment represented by this unit hydrograph.

ii) Calculate the flood hydrograph due to a storm of rainfall excess of 2cm during the first 6h and 4cm during the second 6.h interval. The base flow can be assumed to be 25 m^3/s constant throughout.

SECTION – B

6.	a)	Describe chow method to determine the aquifer parameter.	**7**
	b)	A fully penetrating well is installed in confined acquifer which thickness is 25m and discharge ratc of well is $45 m^3/h$. Calculate the draw-down made in the well using Theis method. Assume the value of Well function W (u) = 1 and permeability K of acquifer = 0.65 m/h.	**7**
7.	a)	What are different types of strainers? Explain the construction of a strainer tube well.	**7**
	b)	How would you estimate the yield of a tube well? Explain the procedure for the design of a tube well.	**6**
8.	a)	What is watershed characterization? How it can be used?	**6**
	b)	Explain the Formulation of Project proposal for watershed management work.	**7**
9.	a)	What is wetlands? Discuss briefly the best management practices on Wetlands.	**7**
	b)	Discuss the legislation of non-point sources of pollution.	**6**
10.	a)	Explain the various methods of Roop top rainwater harvesting.	**7**
	b)	Explain the Role of NGO and community in rain water harvesting.	**6**

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