Roll No. | | | | | | | | | | | |

Total No. of Pages: 02
Total No. of Questions: 09

B.TECH (Sem.-7th & 8th)

HYDROLOGY AND DAMS

Subject Code: CE-402
Paper ID: [A0624]

Time: 3 Hrs. **Max. Marks:60**

INSTRUCTIONS TO CANDIDATE:

1. ***Assume missing data suitably. Section A is compulsory***
2. ***Attempt any four question from Section-B***
3. ***Attempt any two question from Section-C***

SECTION-A

Q.1 **10x2=20**

(a) Write water balance equation.

(b) Define the terms (i) Intensity of rainfall (ii) Run off

(c) What are the various methods for determining areal averages of rainfall?

(d) What is the use of intensity duration curve?

(e) What are the various factors affecting surface runoff?

(f) Define unit hydrograph

(g) What are the various components of earth dams?

(h) How do you make use of rainfall frequency analysis information?

(i) What are the advantages of buttress dams?

(j) List any four methods to analyse the stability of gravity dams

SECTION-B

Q.2 What are assumption of unit hydrograph theory 5

Q.3. Given the following 2 hr-unit hydrograph procedure to construct a 3-hr unit hydrograph. 5

Time(hr)	0	1	2	3	4	5	6
Q(cumecs)	0	250	625	500	250	125	0

Q.4. One drainage area 500 ha, an intense rain falls at uniform a rate of 6 cm/h for a period of 69 min. the average infiltration capacity during the entire rain period has been work out as 1.5 cm/h. if the peak discharge based on 10 min interval from the distribution graph for the basin is 18% determine the maximum run off rate. 5

Q.5. Explain and compare the different methods of foods estimates 5

Q.6. Describe the factors affecting interception, eviration from free water surfaces and land surfaces. 5

SECTION-C

Q.7. Draw elementary profile of a gravity dam. Derive an expression for its base width taking considering the following conditions:

a) The resultant of all the forces passes through lower middle third point 10
b) The dame safe in sliding 10

Q.8. Explain cylinder theory. How thickness of arch dam is determined from cylinder theory?

Q.9. Write notes on:-

a) Uplift force
b) Drainage gallery
c) Phreatic line
d) Grout curtain 10

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