Total No. of Questions : 12]

SEAT No. :

P3307

[Total No. of Pages : 3

[4959]-21

B.E. (Civil)

INTEGRATED WATER RESOURCES AND PLANNING

(2008 Pattern) (Elective - IV (a))

Time : 3 Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) ***Answer any three questions from each section.***
2) ***Answer any three questions from Section-I and three questions from Section-II.***
3) ***Answer to the two sections should be written in separate answer booklet.***
4) ***Neat diagrams must be drawn wherever necessary.***
5) ***Figures to the right indicate full marks.***
6) ***Your answer will be valued as a whole.***
7) ***Use of electronic pocket calculator is allowed.***
8) ***Assume suitable data if necessary.***

SECTION - I

Q1) a) Explain the significance of prior appropriation. **[4]**

b) What are riparian rights? Explain any two. **[6]**

c) Discuss the different principles of planning and financing of water resource project. **[8]**

OR

Q2) a) What is National Water policy? Explain the recent norms of National Water Policy at state level. **[6]**

b) Write a short note on scope for privatization in the field of water resources. **[4]**

c) Enlist the different water infrastructure problems and their perspective. **[8]**

P.T.O.

Q3) a) The runoff of stream in the month of October has mean and standard deviation of 265 and 200 cumec months respectively. Assuming that lognormal distribution is a good fit. Find the probability that October runoff in the stream in any year exceeds 350 cumec months. What is the probability that the October runoff would fall in the range 150 to 350 cumec months? **[8]**

b) Define mean, mode, median, standard deviation and coefficient of a distribution. **[8]**

OR

Q4) a) Write short note on : **[8]**

i) Application on ANN in flood prediction/rainfall-runoff prediction.

ii) Use of Fuzzy Logic in water resources planning & management.

b) Define mean, mode, median, standard deviation and coefficient of a distribution. **[8]**

Q5) a) State general methods of flood forecasting used in India. **[8]**

b) Distinguish between the mitigation plans of flood management and drought management. **[8]**

OR

Q6) a) Explain the use of geoinformatics in drought management. **[8]**

b) What are different types of Drought? Explain severity index of drought with suitable examples in India. **[8]**

SECTION - II

Q7) a) State the different water requirements for environmental management and explain any three of them in detail. **[9]**

b) What is water quality management? Discuss various issues related to water quality management. **[9]**

OR

Q8) a) What is the role of an Civil Engineer in protection of vital ecosystem. **[9]**

b) Write a short note on Aquaculture. **[9]**

Q9) a) Correlate direct and indirect benefits of water resource development to employment generation. **[8]**

b) Explain 'Co-operative movement in the water resource development' with the help of case study. **[8]**

OR

Q10) a) Write a note on control of water logging and its different types. **[8]**

b) Explain how the social impact of water resource development is related to agro-industry. **[8]**

Q11) a) What is Decision Support System for Integrated Water Resource Planning and Management? Explain with suitable example. **[10]**

b) Explain the concept of perspective plan for basin development and management. **[6]**

OR

Q12) a) Write short note on : **[8]**

i) Application of ANN in flood prediction/rainfall-runoff prediction.

ii) Use of Fuzzy Logic in water resources planning and management.

b) State and define four statistical parameters used in statistical methods. **[8]**