Total No. of Questions : 12]

SEAT No. :

P2146

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[5059]-510
B.E. (Civil)
INTEGRATED WATER RESOURCES PLANNING & MANAGEMENT
(2012 Course) (Semester-I) (Elective-II) (End Sem)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10, Q.11 or Q.12.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data if necessary.***

UNIT-I

Q1) a) Write a note on "Water resources in India". **[3]**

b) Water infrastructure-problems and perspectives, explain. **[3]**

OR

Q2) a) State and explain "National Water Policy". **[3]**

b) Write a note on "Ground water ownership". **[3]**

UNIT-II

Q3) a) "Principles of water pricing & water allocation", Explain. **[3]**

b) Write a note on "water scarcity". **[3]**

OR

Q4) a) What are the global and national perspectives of water crisis? **[3]**

b) Write in brief about the concepts of 'blue water', 'Green water', and 'virtual water' and their roles in water management. **[3]**

UNIT-III

Q5) a) Explain "inter basin water transfer". **[4]**

b) What are the measures to control-water logging, salinity & siltation of storage. **[4]**

OR

P.T.O.

Q6) a) Explain the following: **[4]**

i) Severity index.

ii) Drought forecasting.

iii) Damage assessment.

iv) Mitigation plan.

b) What is the use of geo-informatics in management of flood? **[4]**

UNIT-IV

Q7) a) Write a note on-Consumptive & non consumptive demand of water. **[8]**

b) Explain in brief about water management in irrigation sector. **[8]**

OR

Q8) a) How to estimate & forecast "water demands of domestic & industrial sector". **[8]**

b) What are navigation and recreational water demands? **[8]**

UNIT-V

Q9) a) How to protect the vital ecosystem by Environmental management. **[8]**

b) Write a note on "aquaculture". **[8]**

OR

*Q10)*a) Explain direct/indirect benefits of water resources development. **[8]**

b) State and explain management of rehabilitation & resettlement. **[8]**

UNIT-VI

*Q11)*a) What is the use of - Decision support system for Integrated Water Resources Management. **[8]**

b) Explain the data driven techniques - Artificial Neural Networks, Genetic programming for Basin planning & Watershed management. **[10]**

OR

*Q12)*a) What is meant by Watershed? How it is classified? And explain in short "integrated approach for watershed management". **[8]**

b) What is the role of RS & GIS in watershed management? **[10]**

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