

Total No. of Questions : 12]

SEAT No. :

P3521

[4959]-1010

[Total No. of Pages : 2

B.E.(Civil)

**INTEGRATED WATER RESOURCES AND PLANNING
(2012 Course) (Semester-I)(End semester)(Elective-II)**

Time :2½Hours]

[Max. Marks : 70

Instructions to the candidates:

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

Q1) a) What do you mean by Institutional frame work for water management. **[3]**

b) Comment on “water infrastructure-problems and perspectives”. **[3]**

OR

Q2) a) Explain in brief “Ground water ownership”. **[3]**

b) Write a note on “World water resources”. **[3]**

Q3) a) Explain water laws and constitutional provision for water management. **[3]**

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

OR

Q4) a) How Benefit cost analysis is carried out in IWRP explain. **[3]**

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

Q5) a) What are the causes of flood? And explain in brief the control measures for it. **[4]**

b) State the principles of planning and financing of water resources project. **[4]**

OR

Q6) a) What are the control measures for water logging, salinity and siltation of storages? **[4]**

b) What is the use of geoinformatics in management of flood? **[4]**

P.T.O.

- Q7)** a) Explain in detail necessity of water management in irrigation sector. [8]
b) Write a note on estimation and forecasting of water demand for irrigation sector. [8]

OR

- Q8)** a) What is thermal and nuclear water demands? Explain how it is estimated. [8]
b) What are consumptive and non consumptive demands? Explain in detail. [8]
- Q9)** a) What is “Decision support system for Integrated Water Resources Planning (IWRP)” [8]
b) Write a note on “Protection of vital ecosystem” [8]

OR

- Q10)** a) What are the direct and indirect social impacts of water resources development? [8]
b) Write note on [8]
i) Minimum Flow
ii) Water quality management.

- Q11)** a) Write note on role of RS and GIS in watershed management. [8]
b) Explain in short about the two terms: [10]
i) Contour bunding
ii) Check dams

OR

- Q12)** a) Explain necessity of soil and water conservation. [8]
b) How watersheds are classified? Explain integrated approach for watershed management. [10]

