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[5155]-146

[Total No. of Pages : 2

M.E. (Civil)

WATER RESOURCES AND ENVIRONMENTAL ENGINEERING

Planning and Management of Water Resources

(2013 Course) (Semster - I) (501081)

Time : 3 Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) Answer any five questions from all the questions.*
- 2) Neat diagrams must be drawn wherever necessary*
- 3) Figures to the right side indicate full marks.*
- 4) Use of calculator is allowed.*
- 5) Assume suitable data, if necessary.*

Q1) a) What are various opportunities created by water resource? Justify need of planning and management of water resources. **[6]**

b) Explain the system components of water resources planning and management and state various approaches of planning and management of water resources. **[4]**

Q2) a) Comment on constraints for development of water resources. **[5]**

b) Explain constraints like non reversibility for development of water resources. **[5]**

Q3) a) Explain financial analysis of multipurpose water resources projects. **[6]**

b) Comment on repayment of cost in multipurpose project. **[4]**

Q4) a) How the priority is fixed as per Maharashtra water act for various purposes. **[6]**

b) What are various plans implanted for controlling flood. **[4]**

Q5) a) How reservoir sedimentation control is playing important role in water management. **[4]**

b) Explain any one water doctrine to avoid conflict amongst users. **[6]**

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- Q6)** a) How is the impact of climate change on river flow regimes related to the impact on mean annual runoff. [4]
b) Explain vulnerability assessment of water supply in agricultural reservoir utilizing probability distribution and reliability analysis methods. [6]
- Q7)** a) Write a note on center for ground water evaluation and management.[4]
b) Explain how conjunctive use of surface and ground water play Important role in water management. [6]
- Q8)** a) State discounting techniques and explain any one. [4]
b) Explain social benefits due to water resources projects. [6]

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