

B.E. (Civil Engineering) Eighth Semester (C.B.S.)

**Elective-II : Watershed Management**

P. Pages : 2

Time : Three Hours



**NRT/KS/19/3616**

Max. Marks : 80

- Notes :
1. All questions carry marks as indicated.
  2. Solve Question 1 OR Questions No. 2.
  3. Solve Question 3 OR Questions No. 4.
  4. Solve Question 5 OR Questions No. 6.
  5. Solve Question 7 OR Questions No. 8.
  6. Solve Question 9 OR Questions No. 10.
  7. Solve Question 11 OR Questions No. 12.
  8. Due credit will be given to neatness and adequate dimensions.
  9. Assume suitable data whenever necessary.
  10. Illustrate your answers whenever necessary with the help of neat sketches.
  11. Use of non programmable calculator is permitted.

1. a) What is the role of soil for the growth of plant life. 4  
b) Define – Field capacity, wilting point and optimum moisture content. 4  
c) Define consumptive use, what the factors affecting it. 6

**OR**

2. a) What are causes of waterlogging? What are the remedial measures to be adopted to control it? 7  
b) What are the various standards of irrigation water? 7
3. a) What are the various effect of changes in land use on hydrological cycle, explain with the help of sketches? 7  
b) Write short notes on water auditing along with its importance. 6

**OR**

4. a) What are the effects of soil erosion on land fertility and land capability? 7  
b) What are the methods of control of soil erosion in agriculture and non agriculture land? 6
5. a) Explain various agronomical measures to be adopted for soil and water conservation. 7  
b) What do you mean by water harvesting? Explain various techniques in brief. 7

**OR**

6. a) What is peak runoff? States its importance and also explain the methods of estimation. 7  
b) Explain catchment area? How the critical catchment is identified? 4

- c) Differentiate for type and fern type catchment. **3**
- 7.** a) Explain watershed development programme. Also explain how integrated and multidisciplinary approach will help in watershed management. **7**
- b) What are the different agencies work for watershed management projects? Explain one of them. **6**

**OR**

- 8.** a) Explain in detail the importance of watershed management in India. **7**
- b) What are the various methods of watershed management? Explain in brief. **6**
- 9.** a) What are the various guide lines to be adopted for planning of watershed projects? **7**
- b) What are the various objectives of planning of watershed projects? **6**

**OR**

- 10** Write short notes on.
- i) Objectives of Rain water harvesting. **4**
- ii) Use of GIS tool for watershed project. **4**
- iii) Socio economic survey for watershed development. **5**
- 11.** a) What are the various parametric models to be used for watershed analysis? **8**
- b) Explain USLE model for soil erosion. **5**

**OR**

- 12.** a) What are the various approaches and tools used for watershed modelling? **8**
- b) Write a short note on variable source area model. **5**

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