

- (7) While considering flow between two water bodies, the piezometric head is taken as
- (a) A straight line (b) A parabola
(c) An arc of a circle (d) A part of an ellipse
- (8) A geological formation which has good porosity but very less permeability is known as
- (a) Aquifer (b) Aquifuge
(c) Acquitar (d) Acquiclude
- (9) Use of UH for estimating floods is limited to catchments of size less than
- (a) 500 km² (b) 50 km²
(c) 5 km² (d) 5000 km²
- (10) In a linear reservoir the storage varies linearly with
- (a) Elevation (b) The outflow rate
(c) Time (d) The inflow rate.

(10×2=20)

M. Tech 3rd Semester Examination

Watershed Management

WRE-116

Time : 3 Hours

Max. Marks : 100

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt five questions in all, selecting one question from each section A, B, C, D. Section E is compulsory.

SECTION - A

- (a) How does Watershed Deterioration occurs? List various causes. (10)
(b) What do you understand by Benchmark Survey of a Watershed? Discuss different studies you are going to consider in this survey. (10)
- Explain the significance of Participatory Rural Appraisal Programme (PRAP) in 'Watershed Management'. Enlist Basic principles and fundamentals of PRA. (20)

SECTION - B

- Explain the significance of Hydrologic Cycle to a Watershed system. Draw a neat sketch showing watershed system with complete details. Also discuss different components inbuilt in it. (20)
- (a) Discuss water resources present in our country "India" with the help of relevant statistics. (10)

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- (b) Discuss in general the different environmental problems related with the management of water resources. (10)

SECTION - C

5. (a) Environmental Impact Assessment (EIA) helps in monitoring construction projects. Discuss in brief how it is carried out. (10)
- (b) Discuss effects of dams and reservoirs in favour of environment. (10)
6. What do you understand by a 'Multipurpose Hydro Project'? Discuss different combinations and conditions favourable to each of them. Give examples of such projects in India with project name, location and purpose. (20)

SECTION - D

7. (a) Discuss economic evaluation with respect to watershed management. (10)
- (b) Discuss problems of execution and management in big hydraulic structures. (10)
8. Discuss the project "Interlinking of rivers in India". Is it necessary to execute such a project to solve our water crisis? Can it be replaced by some other concept, if yes then discuss in detail. (20)

SECTION - E

9. Tick the correct option:
- (1) Isotherm is a line which joins the points of equal
- (a) Rainfall depth (b) Temperature
- (c) Humidity (d) Atmospheric pressure

- (2) Double mass curve technique is applied
- (a) To check the distribution of rainfall data in the catchment
- (b) To check the variability of rainfall data
- (c) To check the consistency of rainfall data
- (d) To prepare isohyetal maps
- (3) During anticyclones in Northern Hemisphere, wind blows
- (a) Clockwise inward (b) Anticlockwise inward
- (c) Clockwise outward (d) Anticlockwise outward
- (4) The rating curve of a stream gauging station gives the
- (a) Variation of discharge in the stream with area of flow
- (b) Variation of discharge in the stream with stage
- (c) Variation of discharge in the stream with depth of flow
- (d) Variation of discharge in the stream with velocity of flow
- (5) Water year in India starts from the first day of
- (a) January (b) April
- (c) June (d) March
- (6) Discharge per unit drawdown is called
- (a) Specific yield (b) Specific storage
- (c) Storage coefficient (d) Specific capacity