

Hydrology and water resources.

(2 marks)

- (1). What are the forms of precipitation ?
- (2). Explain runoff .
- (3). What is infiltration ?
- (4). Explain hydrological cycle.
- (5). What is water budget equation?
- (6). Explain the terms :-
 1. Unit hydrograph
 2. Evaporation process.
- (7). What is canal system ?
- (8). What are canal losses ?
- (9). Explain gravity dam .
- (10). What do you mean by duty and delta ?
- (11). Explain briefly flood control .
- (12). Explain :-
 1. Arch dam
 2. Buttress dam.
- (13). Explain the effects of water logging .
- (14). What are the components of hydrograph ?
- (15). What is methods of irrigation ?
- (16). What are the design of channels
- (17). Explain spillways and its components .
- (18). What do you understand by reservoirs?

(19). Explain:- 1. Reservoir regulation

2. Sedimentation.

(20). What is economic height of dam ?

(5 marks Questions.)

(1). What are the various causes for the reservoirs sedimentation ?

(2). What are the various causes of flood ?

(3). What is Darcy's law ? What are its limitations ? How you measure the coefficient of permeability of soil ?

(4). What is transpiration ? What are the various factors that affect transpiration ? How would you measure transpiration ? What is transpiration ratio ?

(5). What is unit hydrograph ? What are the basic propositions of the unit hydrograph theory ?

(6). What is the hydrological cycle ? Give a brief description of different components of the hydrological cycle .

(7). Describe various forms of precipitation.

(8). Explain gravity dam and also zoning method of checking design of gravity dam.

(9). The ordinates of an IUH are as below :-

Time : 0 1 2 3 4 5 6 7 8 9 10 12 14 16 18

H : 20.

IUH. : 0,11,37,60,71,75,72,60,45,33,21,12,6

Ordinate: 0.

(3 / .)

(M / s) :

(A). What is the areal extent of the catchment

(B). Derive a 6-hour hydrograph for the catchment .

(10). Enumerate different types of buttress dams along with neat sketches .What are the limitations of Kennedy's theory of design of canal?

11) Describe briefly ogee spillway.

12) Describe the method of separation of base flow from total runoff?

13) After how many days will you supply water to soil in order to ensure

sufficient irrigation of the given crop, if,

Field capacity of the soil = 28%

Permanent wilting point = 13%

Dry density of soil = 1.3 gm/cc

Effective depth of root zone = 70 cm

Daily consumptive use of water for the given crop = 12 mm

(10 marks Questions)

(1). What are assumption of unit hydrograph theory ?

(2). Give of following 2 hr unit hydrograph procedure to construct a 3 hr unit hydrograph .

Time (h): 0, 1, 2, 3, 4, 5, 6.

_____:

Q meter. :

Cube per : 0, 250, 625, 500, 250, 125, 0

Second :

(3). Explain and compare the different methods of foods estimates .

(4). Draw elementary profile of a gravity dam.

Derive an expression for its base width taking

Considering the following conditions :-

1. The resultant of all the forces posses through lower middle third point .
2. The dam safe in sliding .

(5). Write short note on :-

- A. Uplift pressure
- B. Drainage gallery
- C. Grout curtain
- D. Water balance equation..

(6). Describe the factors affecting interception evapotranspiration from tree water surface and land surface .

(7). Explain cylinder theory .How thickness of arch dam is determined from cylinder theory.

(8). What are the various component of earth dams in briefly ?

(9). Define :-

1. Intensity of rain fall
2. Methods of precipitations.

(10). What is canal lining and its methods ?

11) Describe double mass curve techniques used to check the consistency of

rainfall data and adjust rainfall records.

12) Design and sketch an irrigation channel to carry 10 cumecs. The channel is

to be laid on slope of 0.2m per KM. Assume $N=0.025$ and $m=1$.

13). Unit hydrograph ordinates of 4 hour are given below. Find out ordinates of

8hour unit hydrograph

Time 0 4 8 12 16 20 24 28 32 36

U.H.O 0 17 28 42 72 60 47 32 15 0