KATHMANDU UNIVERSITY
End Semester Examination
August/September, 2017

Mark Scored:

Level : B. E.
Year : II
Course : CIEG 206
Semester : II
Exam Roll No. :
Time: 30 min
F. M. : 10
Registration No.:
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SECTION "A"
[20 Q. × 0.5 = 10]

Tick (✓) the most appropriate answer

1. The term base flow denotes
   a. Delayed ground water flow reaching a stream
   b. Delayed ground water and snowmelt reaching a stream
   c. Delayed ground water and interflow
   d. The annual minimum flow in a stream

2. In selecting a site for rain gauge the nearest object should be at a minimum distance of
   a. Twice its height b. Thrice its height c. Equal to its height d. Anywhere

3. _____ model include scale model that represent system on a reduced scale
   a. Stochastic b. Deterministic c. Physical d. Abstract

4. The rainfall mass curve shows the variation of
   a. Accumulated rainfall Vs. time in chronological order
   b. Accumulated rainfall intensity Vs. time
   c. Precipitation intensity Vs. time in chronological order
   d. Rainfall depths for various equal duration plotted in decreasing order

5. The ratio of the radiation reflected back by a surface to the radiation received by it is called
   a. Radiation coefficient b. Absorption coefficient
   c. Bowen's ratio d. Albedo

6. The stage in the river is defined as
   a. The elevation of the water surface above an arbitrary datum
   b. The average depth of flow in the stream
   c. The hydraulic radius of stream cross section
   d. Hydraulic depth of stream cross-section

7. In the two point method of finding the mean velocity across a vertical in a stream using a current meter, the velocities are measured above the stream bed at
   a. 0.25 and 0.75 depths b. 0.2 and 0.8 depths
   c. 0.4 and 0.6 depths d. 0.15 and 0.85 depths

8. The sediment laden water with higher density than the surface water in the reservoir flowing underneath the surface water is called
   a. Eddy current b. Sediment current c. Density current d. Flush current

9. ϕ-index is defined as
   a. the difference between maximum and minimum infiltration capacities
   b. the maximum rate at which soil absorbs water
   c. the average rainfall above which the rainfall volume equals to the runoff volumes
   d. the minimum infiltration rate during the storm

10. Direct runoff is the sum of
   a. The surface runoff and the base flow
   b. The base flow and the ground water runoff
   c. The delayed subsurface runoff and the deep percolation
   d. The surface runoff, prompt interflow and the precipitation on the channel surface

11. The peak ordinate of a 4h unit hydrograph of a basin is $270m^3/s$. Then, the peak ordinate of a 8h unit hydrograph of same will be basin
   a. Equal to $270m^3/s$
   b. Less than $270m^3/s$
   c. More than $270m^3/s$
   d. Difficult to tell

12. Symon's rain gauge is
   a. Tipping bucket gauge
   b. Weighing type gauge
   c. Float recording gauge
   d. Non- recording gauge

13. Area velocity of stream flow measurement involves measuring
   a. Amount of salt used and velocity
   b. Cross sectional area and sediment sampling
   c. Velocity of flow and cross sectional area
   d. Velocity of flow and plan area

14. The probability of occurrence of an event ($x \geq x_T$) at least once over a period of n successive years is risk $\bar{R}$ and is given by
   a. $1-(1-1/T)^n$
   b. $(1-1/T)^n$
   c. $-\ln.\ln (T/T-1)$
   d. $-\ln.\ln (T-1)/T$

15. The base period of a 6h hydrograph of a basin is 84h. Then the base period of 12h unit hydrograph of the same basin will be
   a. 90h
   b. 84h
   c. 72h
   d. 168h

16. If e_w and e_a are the saturated vapor pressure of the water surface and air respectively, the Dalton's law for evaporation E_L in unit time is given by E_L =
   a. $(e_w - e_a)$
   b. $K.e_w.e_a$
   c. $K(e_w - e_a)$
   d. $K(e_w + e_a)$

17. A geological formation which is essentially impermeable for flow of water even though it may contain water in its pores is called
   a. Aquifer
   b. Aquifuge
   c. Aquitard
   d. Aquiclude

18. A catchment of area 90 hacters has a runoff coefficient of 0.4 A storm of duration larger than the time of concentration of the catchment and of intensity 4.5 cm/h creates a peak discharge rate of
   a. 11.3 m3/s
   b. 4.5 m3/s
   c. 0.45 m3/s
   d. 450 m3/s

19. In the two point method of finding the average velocity using the current water across a vertical in a open channel , the velocities are measured below the free surface at
   a. 0.25 and 0.75 depths
   b. 0.20 and 0.80 depths
   c. 0.40 and 0.60 depths
   d. 0.15 and 0.85 depths

20. The simple, predictable and stable conceptual method for estimation of direct runoff depth based on storm rainfall depth is
   a. Thiessen method
   b. Salt dilution method
   c. SCS – CN method
   d. Rational method