

KATHMANDU UNIVERSITY
End Semester Examination
January 2025

Marks Scored:

Level : B.E.
Year : IV

Course : CIEG 407
Semester : I

Exam Roll No. :

Time: 30 mins.

F. M. : 10

Registration No.:

Date

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SECTION "A"

[20Q. × 0.5 = 10 marks]

Choose the most appropriate answer and **encircle**.

- Application efficiency of irrigation is best defined as the ratio of
 - Water for normal consumptive requirement to water depleted from the zone
 - Water actually stored in the root zone to water delivered to the farm
 - Water reaching the farm to water released from the head works
 - Water actually delivered to the farm to water actually reaching the farm
- If the depth is 8.64 cm on a field over a base period of 10 days, then the duty is
 - 10 hectares per cum/s
 - 100 hectares per cum/s
 - 864 hectares per cum/s
 - 1000 hectares per cum/s
- In a curved reach of a meandering river, both deposition of sediments and erosion of bank occur. Which one of the following statements is true in this regard?
 - Deposition of sediments occurs in the inner bank while the outer bank is subjected to erosion
 - Deposition of sediments occur in the outer bank while the inner bank is subjected to erosion
 - In the direction of flow, the outer bank undergoes erosion first and the sediments are later deposited on the outer bank downstream
 - In the direction of flow, the inner bank undergoes first and the sediments are subsequently deposited on the inner bank downstream.
- A canal fall is a control structure
 - Located at a place where the country slope is flatter than the canal bed slope
 - Located most economically where the depth of cutting is less than the balancing depth
 - The location of which is independent of the command to be served
 - designed to secure raising of water surface on its upstream
- Leaching is a process
 - By which alkali salts present in the soil are dissolved and drained away
 - By which alkali salts in soil come up with water
 - Of draining excess water of irrigation
 - Which controls water-logging
- According to Khosla's theory the exit gradient is given by
 - $(d/H) \cdot (1/\pi \cdot \lambda)$
 - $(H/d) \cdot (1/\pi \cdot \lambda)$
 - $(H/d) \cdot (\pi \cdot \lambda)$
 - $(d/H) \cdot (\pi \cdot \lambda)$

7. If the discharge of an alluvial river is 1800 cumecs, the waterway for a bridge on the river should be
 a. 101.5m b. 151.5m c. 201.5m d. 251.5m
8. In a deflecting spur, the angle between the axis of the spur and the bank on the upstream side is
 a. Acute b. Obtuse c. Reflex d. Perpendicular
9. Khosla's theory of independent variables is applicable to structure founded on
 a. Rock b. Clay c. Sand d. Concrete
10. In well drained soil, the useful soil moisture for plant growth essentially comes from
 a. Gravity water b. Capillary water c. Hygroscopic water d. Water of adhesion
11. A land is known as waterlogged when
 a. The pH of soil reaches a value of 8.5
 b. The soil in the root zone has high salinity
 c. The soil pores in the root are saturated with water
 d. There is water flowing on the surface of the land
12. There is minimum wastage of water in
 a. Furrow irrigation b. Check basin irrigation
 c. Sprinkler irrigation d. Border method irrigation
13. The downstream expansion head of a guide bank is extended to subtend an angle at the center between
 a. 30° and 45° b. 45° and 60° c. 60° and 75° d. 75° and 90°
14. Cross-regulators in main canals are provided to
 a. Regulate water supply in the off-taking channel
 b. Regulate water supply in the main canal
 c. Regulate excessive flood water
 d. Head up water for adequate supply into the off-taking channel
15. A super passage is a cross-drainage work provided when bed of natural work provided when bed of natural drain is
 a. At the same level as the canal bed b. Well above the full supply level in canal
 c. Below the full supply level of canal d. Below the bed level of canal
16. A characteristics feature of a barrage is
 a. The provision of a raised crest
 b. The creation of a storage reservoir on the upstream side
 c. The provision of a series of gates across the river for flow regulation
 d. That it is built in delta areas
17. The interval supply of irrigation water depends on the type of
 a. Crop only b. Soil and crop
 c. Crop and climate d. Soil, crop, and climate

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18. The term piping used in connection with diversion structures on permeable soil is associated with
- a. Drainage of seepage water
 - b. Measurement of uplift pressure
 - c. Failure initiated by boiling
 - d. Consolidation of foundation
19. Levees in the river training works are constructed
- a. Parallel to the river flow
 - b. Across the flow
 - c. Inclined to the bank in U/S direction
 - d. Inclined to the bank in D/S direction
20. In a design of canal, falls are provided
- a. To dissipate the energy
 - b. When ground slope is steeper than the ground slope
 - c. When the canal bed slope is steeper than the ground slope
 - d. To reduce hydraulic losses

