B.E. SEMESTER VII (CIVIL ENGG.)Question Bank

SUBJECT: IRRIGATION ENGINEERING (CE 502)

All questions carry equal marks (10 marks)

Q.1	Explain the following terms: Kor period, C.C.A., Temporary Wilting Point, Base period, Crop period.
Q.2	Explain the advantage and disadvantage of sprinkler irrigation system.
Q.3	What is "Assessment of irrigation water"? In which situation volumetric method is adopted? What are its shortcomings?
Q.4	Discuss briefly the benefits as well as the ill effects of irrigation system.
Q.5	How would you proceed to determine phreatic line through homogenous earth dam provided with a horizontal filter?
Q.6	Explain the working of sprinkler irrigation system with a neat sketch.
Q.7	Give the short note on "Bligh creep theory".
Q.8	Briefly describe drawbacks of Kennedy's theory for design of canal in alluvial soil.
Q.9	Give the short note on "Classification of irrigation canal".
Q.10	Explain the term "Water logging"? How to control water logging?
Q.11	Explain in brief Canal Lining and its advantages and disadvantages.
Q.12	What are the factors which effect the selection of site for dam site?
Q.13	Give difference between Silt Excluder and Silt ejector in brief.
Q.14	Give difference between Weir and Barrage in brief.
Q.15	What is the initial and final regime conditions of an alluvial channel according to Lacey's?
Q.16	Describe the various considerations made in alignment of an irrigation canal.
Q.17	Discuss various methods used for energy dissipation below spillway.
Q.18	What do you understand by a fall in canal? How do you select its location?
Q.19	Give short note on "Irrigation Development in India"
Q.20	Write short note on "Head Regulator" and "Canal Regulator".
Q.21	Give the comparisons of 'Bandhara Irrigation' and 'Lift Irrigation'.
Q.22	Give the difference between "Sprinkler Irrigation System" and "Drip Irrigation System".
Q.23	Explain the following terms: Syphon, Aqueducts, Irrigation efficiency, Irrigation frequency, Sluice way.
Q.24	Explain various methods of reducing seepage through earthen dams.
Q.25	Write short note on "Relationship between Duty, Delta and Base period".
Q.26	Draw a neat sketch of Diversion Head work and explain functions of each component.
Q.27	Describe with the help of sketches, the various types of cross-drainage works
Q.28	Which considerations are taken when design earthen dam in earthquake region?

Q.29	Discuss various factors affecting while design spillway.
Q.30	Explain in brief various forces acting on Gravity dam with suitable sketches.
Q.31	Discuss the various modes of failure of Gravity dam.
Q.32	Define the term "Exit Gradient". What is the importance of exit gradient? How would you check the exit gradient?
Q.33	Discuss the various causes of failure of Earth dam
Q.34	What do you understand by the elementary profile of the gravity dam? Derive the expression for determining the base width of such a dam based on (i) Stress criteria, (ii) Sliding criteria.
Q.35	Discuss briefly the causes of failure of hydraulic structures founded on pervious foundation.
Q.36	Enlist different types of irrigation efficiencies. Explain them in brief
Q.37	After how many days will you supply water to soil in order to ensure efficient irrigation of the given crop, it (i) Field capacity of soil = 35% (ii) Permanent wilting point = 15% (iii) Density of soil = 1.5 g/cm^3 (iv) Daily consumption use of water for the given crop = 12 mm. (v) Effective depth of root zone = 80 cm.
Q.38	Following data refers to homogeneous earth dam: Top width = 4.5m, Head of water u/s = 15 m. u/s and d/s slope = 2.5 H : 1 V and 2H : 1V respectively, Free board = 2.5 m. Horizontal filter 35 m from d/s toe, Co-efficient of permeability K = 0.008 cm/sec. Calculate seepage per meter length of dam.
Q.39	Design an irrigation canal using Lacey's theory for the following data: Discharge = 55 cumecs Silt factor = 1.6 Side slope = 0.5: 1.
Q.40	The base period, Duty of water and area under irrigation for various crops under a canal system are given in table. The total culturable command area is 50,000 ha. It the losses in the reservoir and canal are respectively 16 % and 25 %. Determine the reservoir capacity.

Crops	Wheat	Sugar crane	Cotton	Rice
Base period (days)	125	315	180	120
Duty (ha/cumecs)	1900	1500	1400	900
% Area irrigated	42%	25 %	12 %	20%