Paper–VI

CIVIL ENGINEERING (Paper-II)

Section-I: (Subjective)

Candidates should attempt nine questions in all including Questions No. 14 Elight of the remaining questins should be attempted slecting at least three from each Section A and B Brief and to the point answer will attact special credit.

1. (a) Mention four main factors which govern particular type of lining.
   (b) Which factors determine the size of an outlet area (Chak)?
   (c) Design a lined canal with the following data:
   Discharge = 35 m^3/s, Bed Slope = 1:1000
   Manning's n = 0.018, Limiting velocity = 1.5 m/s
2. (a) Mention principal types of control structures (regulators)
   (b) Discuss in brief utility of various types of falls.
   (c) Enumerate salient points of central structures.
3. (a) Define uniform and non-uniform flows. Give at least one practical example in each case.
   (b) show that for an open channel flow discharge width is maximum for a given specific energy the flow is critical.
4. (a) What is total energy lost in a jump? Give numerical expression of relative height of a jur
5. (a) What do you mean by a hydrograph? Sketch explain briefly the different part of a hydrograj
   (b) Explain the significance of inflection point falling side of a hydrograph of a run-off.
6. (a) Mention only the methods for estimation of a from a catchment.
   (b) Give two empirical formulae for estimation ol discharge.
7. (a) Establish the relation between duty and delta.
   (b) Mention the important parameters that regular behaviour of a river.
   (c) Discuss in brief the features for the design surface and underground drainage channels.

Section—B

8. (a) What do you mean by super elevation? WI considered necessary for modern traffic?
   (b) What is the principle underlying the design transition curve? What curves are adopted ti transition?
9. (a) Mention the salient points required for the ch a new flexible pavement. Give a neat sketch of it generally adopted in the flexible pavement de5
   (b) Which tests are generally carried out to cot the standard in a road constructed with bitt materials?
10. Write short notes on (any two)
    (a) Street lighting (b) Road classification
    (c) Design hour volume.
11. (a) Discuss in brief how you will approach forth of a water supply system in a newly develop
    (b) Mention the names of different methods of pc forecasting.
12. (a) Which factors govern the type of water suj either continuous or intermittent in a city?
    (b) mention the difference between a slow sal rapid sand filter. What is the advar recirculation?
13. What is a trickling filter ? Give a schematic repre with a near sketch of the cross-section of a biolog in a trickling filter.
14. (a) Define a septic tank. What features are consi design of a septic tank?
    (b) (i) For average Indian condition at 25°c, surface area required for every 10 liters per peak flow in a septic tank ?"
    (ii) What is the normal depth considered for se in septic tank?
    (iii) What normal length/ breadth is considered tank?
    (iv) What is the value of fresh slud volume base (suspended) contribution of 70 gms/cap/ day tank?