CSM : 15

CIVIL ENGINEERING

PAPER - II

Time Allowed : 3 hours  Full Marks : 100

Figures in the margin indicate full marks for the questions.

Attempt any 5 (five) questions taking not more than 3 (three) questions from each Part.

PART A

1. What are the functions of sand in mortar and concrete? Explain the requirements of an ideal plaster. (20)

2. What is Programme Evaluation & Review Technique (P.E.R.T.)? Explain the difference between PERT and CPM network. (20)

3. The radius of horizontal circular is 120 meter. The design speed is 60 kmph. The coefficient of lateral friction is 0.15. Calculate-
   (a) superelevation if full lateral friction is called into play
   (b) coefficient of friction needed if no superelevation is provided and
   (c) equilibriumsuperelevation to maintain equal pressure on inner & outer wheels. (20)

4. Explain the method of construction of W.B.M. Roads. What measures can be adopted to minimise dust nuisance in W.B.M. Road? (20)

PART B

5. Deriving the appropriate routing equation, describe the Muskingum method of channel routing. (20)

6. A field channel has a culturable command area of 2000 hectares. The intensity of irrigation for gram is 30% and for wheat is 50%. Gram has kor period of 18 days and kor depth of 12 cm, while wheat has a kor period of 15 days and kor depth of 15 cm. Calculate the discharge of the field channel. (20)

7. Why is solid waste disposal a significant problem? Briefly discuss the basics of municipal solid waste (MSW) collection and transport. (20)

8. How can a polluted air be distinguished from a non-polluted air? Write down the causes and ill effects of air pollution. (20)