CSM : 15

CIVIL ENGINEERING
PAPER - II

Time Allowed : 3 hours   Full Marks : 100

Figures in the margin indicate full marks for the questions.

Attempt <u>any 5 (five)</u> 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- **(20)**

    (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.

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)**

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