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- b) i) What are the ingredients of cement ? State the function of the ingredients. (8)
- ii) What are the requirements of good cement ? (4)
- iii) State the qualities of good bricks. (4)

12. a) Describe briefly the methods for improving the bearing capacity of soils. (16)

(OR)

- b) i) Compare brick masonry and stone masonry. (12)
- ii) A 200 kN compressive load was applied on a cylindrical specimen of 30 mm diameter and 200 mm length. The decrease in the length of specimen was observed as 0.4 mm. find out the stress, strain and young's modulus of the material. (4)

13. a) i) Draw a layout of a diesel power plant. State the subsystems and components of the plant and explain each one of them briefly. (12)

ii) State the advantages and disadvantages of diesel power plant. (4)

(OR)

b) i) Describe the function of salient components of a centrifugal pump with suitable diagram. (8)

ii) Explain the working of open cycle gas turbine with suitable sketches. (8)

14. a) Explain the working principle of a diesel engine with appropriate sketches. (16)

(OR)

b) i) Compare four stroke engines with two stroke engines. (8)

ii) What do you mean by boiler mountings ? Briefly explain their functions. (8)

15. a) Explain the important components of a simple vapour compression refrigeration system with a sketch. (16)

(OR)

b) Discuss the window and split type room air conditioner. (16)

*1 Sem*