



### **QUESTION ONE (30 Marks) (Compulsory)**

- a. An ideal pavement should meet several requirements. Mention four (4) (4 Marks)
- b. A railway platform is a section of pathway, alongside rail tracks at a railway station, metro station or tram stop, at which passengers may board or alight from trains or trams. List and describe four (4) of them? (8 Marks)
- c. Soil used as a highway material should possess at least six (6) properties. Name six (6)? (6 Marks).
- d. Describe Intelligent Compaction and its objective? (4 Marks).
- e. Prior to the construction activity the design information has to be moved from the plan to the ground. This is accomplished by staking. Discuss one method of staking (include drawings)? (8 Marks)

### **QUESTION TWO (20 Marks)**

- a. The maintenance and rehabilitation of flexible pavements involves a range of activities. List and describe three categories? (6 Marks)
- b. In order to ensure that the undesirable road aggregate gets excluded and the best materials get included, various tests are necessary. Briefly list and describe six (6)? (8 Marks).
- c. To ensure that surface and subsurface flows do not cause excessive ditch or roadway erosion, List and describe three (3) factors that need to be considered?(6 Marks)

### **QUESTION THREE (20 Marks)**

- a. The sub grade for a rigid pavement should possess three (3) properties. List them? (3 Marks)
- b. A Railway Track has four (4) main Components in it. List and describe them? (8 Marks)
- c. Using petty contracts for the execution of different road routine maintenance activities has been shown to have several advantages List five (5)? (5 Marks).
- d. Describe using sketches two (2) types of French drains? (4 Marks)

### **QUESTION FOUR (20 Marks)**

- a. Defects can occur in the road surface or pavement structure. List four (4) defects and main causes? (4 Marks).

- b. When planning installation of a culvert, the most important thing to keep in mind is to make sure that the culvert is adequately sized and has overflow protection. Using sketches, give two (2) examples of well and poorly installed culvert? (6 Marks)
- c. Explain clearing and grubbing of the road construction area (include drawings)? (6 Marks)
- d. Routine maintenance of low traffic rural roads is a widely dispersed activity, requiring small resource inputs over a large number of widely separated points. List four (4) Routine Maintenance Tasks? (4 Marks).

**END**