

12256

11122

3 Hours / 100 Marks

Seat No.

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- Instructions* – (1) All Questions are *compulsory*.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data, if necessary.
- (5) Use of Non-programmable Electronic Pocket Calculator is permissible.
- (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. a) Attempt any **THREE** of the following: **12**
- (i) Draw general layout and write classification of earth moving machines.
- (ii) Draw simple sketches of
- (1) sloping and grading
- (2) shallow grading
- (iii) Explain construction and working of track shoe.
- (iv) List various types of wheeled loader. State their capacity.

P.T.O.

- b) **Attempt any ONE of the following :** **6**
- (i) Explain the role of earth moving machine in
 - (1) Road laying
 - (2) Bridge construction.
 - (ii) Draw block diagram of hydraulic excavator. Explain its working. State its application.
2. **Attempt any FOUR of the following :** **16**
- a) What safety precautions should be considered for Dozer operations ?
 - b) Write the general specifications of a typical earth moving machine.
 - c) Enlist various applications of dredger.
 - d) Draw layout of forklift truck. Explain lifting mechanism.
 - e) Explain self-propeller scraper.
 - f) What are the different types of road roller ? State and explain operation and maintenance of road roller.
3. **Attempt any FOUR of the following :** **16**
- a) Explain working of Hoe and cranes.
 - b) Explain the construction of motor grader. State its application.
 - c) Compare ripping and parallelogram type of rippers.
 - d) List various parameters considered while selecting earth moving machine.
 - e) List the various attachment and application of paver filler.
 - f) Compare tractor with an automobile.

4. a) Attempt any **THREE** of the following : 12
- (i) Draw general layout of a tractor. State importance of counterweight.
 - (ii) What are the different types of dozer blade ? State their applications.
 - (iii) Explain the note of Indian Tractor Industry in growth of agricultural sector.
 - (iv) Write safety operation for safe working of dipper.
- b) Attempt any **ONE** of the following : 6
- (i) List different implements in tractors and its uses and its effects on performance of a tractor.
 - (ii) Draw power train and transmission layout of a tractor. Also write the selection criteria of tractor tyres.
5. Attempt any **FOUR** of the following : 16
- a) Compare general automobile and earth moving machine on following parameters.
 - (i) Travelling speed
 - (ii) Working conditions
 - (iii) Power output
 - (iv) Fuel consumption
 - b) Explain working of front hoe type wheeled loader. State its output.
 - c) What is under carriage maintenance and Explain working of track shoe.
 - d) Explain construction and working of tractor power take off.
 - e) Explain construction and working of dipper.
 - f) What are the different types of forklift truck and explain steering mechanism.

6. Attempt any FOUR of the following :**16**

- a) What are the criteria to be considered while selecting ripper tip ?
 - b) Explain construction and size of clamshell.
 - c) Compare power tilts and tractor
 - d) Draw layout of road roller and label it.
 - e) Explain working of crawler loader.
 - f) Write the procedure of RTO registration for earth moving machines.
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