

Total No. of Questions : 10]

SEAT No. :

P3548

[Total No. of Pages : 2

[4959]-1233

**B.E. (Automobile) (Semester-II)**

**B) OFF ROAD VEHICLES (Elective-III)  
(2012 Pattern)**

*Time : 2 1/2 Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) *Neat diagrams must be drawn wherever necessary.*
- 2) *Figures to the right indicate full marks.*
- 3) *Use of logarithmic tables, slide rule, electronic pocket calculator is allowed.*

- Q1)** a) Explain introduction and classification of Off Road Vehicle? [5]  
b) List the different types of Earth Moving Equipment with applications.[5]

OR

- Q2)** a) Determine the HP required to pull the 30 cm bottom plough with working depth 15 cm. Number of ploughs are 4, traction speed 6 kmph and soil resistance 0.7 kg/cm<sup>2</sup> [5]  
b) Compare Revolving shovel with Stripper shovel. [5]

- Q3)** a) Describe the construction and working of Motor Grader. [5]  
b) Explain the construction & working of wheeled Tractor with neat sketch. [5]

OR

- Q4)** a) Explain the working of Bulldozer with neat sketch and attachment application. [5]  
b) Explain the working of Drag-line with sketch. [5]

**P.T.O.**

**Q5) Explain following: [16]**

- a) Tankers
- b) Gun Carriers
- c) Combat Vehicle
- d) Pulverizers & Rollers

OR

**Q6) a) Explain any 5 tractor attachments used in farm machinery. [8]**

b) Distinguish between transmission drive P.T.O. and independent drive P.T.O. [8]

**Q7) a) Explain OCDB and dry disc calliper brake system of the vehicle. [8]**

b) Explain the Hydraulic system of off Road Vehicle with neat sketch. [8]

OR

**Q8) a) Explain the design aspects of the dumper body. [8]**

b) Write a note on safety features and safe warning system for dumper.[8]

**Q9) a) Explain briefly considering soil vehicle mechanics (any 3): [12]**

i) VCI

ii) RCI

iii) MI

iv) Nominal ground pressure

b) Explain characteristics of soil. [6]

OR

**Q10) a) Explain the different soil horizons with neat sketch. [12]**

b) What are the factors affecting traction performance? [6]

