

**Question Paper Code : 11118**

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2014.

Eighth Semester

Automobile Engineering

080190049 — OFF ROAD VEHICLES

(Regulation 2008)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is the use of the excavator crane?
2. What is the use of sheep's road roller? Mention its two uses of that.
3. What is meant by bank sloping? Where it is implemented?
4. What are the limitations of the gear?
5. What are the uses of Haulage vehicles?
6. Mention the basic principle of scissors like trucks. Mention two application of that.
7. What is meant by angle dozers, where it is used?
8. Mention about the slide hill cutting uses.
9. What is the use of the till dozers?
10. What is the use of referee vehicle?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the working principles involved in mobile cranes with strut and cantilever jibs, with neat sketch. (16)

Or

- (b) (i) What is the use of vibrating components? What is the relationship between dampers and vibration? (8)
- (ii) Explain with working principle of smooth wheeled rollers. (8)

12. (a) What is the use of snow removal, drag shovel, hoe and explain the excavators are classified? Mention its major types. (16)

Or

- (b) (i) Give explanation about running gear and operation equipment in an air brake system. (8)  
(ii) Explain the working principle and operation of medium and heavy graders. (8)
13. (a) Explain the dampers and front front dipping and how you will balance the rotating mass for 360°, in the heavy lifting light tractors? (16)

Or

- (b) (i) Explain the working principle of front lifting tracking and which energy is used to lift the load? (8)  
(ii) Explain the driver seat in relation with control clearly. (8)
14. (a) (i) Explain with neat sketch about the tractor towed rooters. (8)  
(ii) What is the use of the shovel bucket Specify the CNC operation involved in that? (8)

Or

- (b) (i) Explain the difference in load capacities capacity technology for low, heavy and medium tractors. (8)  
(ii) Explain the Scampering and Heavy embankments. (8)
15. (a) (i) Explain the design of body and forces in role over. (8)  
(ii) Explain the head on impact and structural vibration. (8)

Or

- (b) (i) Explain the factors affecting the working efficiency of the heavy load tractors. (8)  
(ii) Explain the oil tankers surveillance vehicle and why the ambulance written reversely in the front of the rear vehicle? (8)