

**PARUL UNIVERSITY**  
**FACULTY OF ENGINEERING & TECHNOLOGY**  
**B.Tech. Winter 2022 - 23 Examination**

**Semester: 7**  
**Subject Code: 203102433**  
**Subject Name: Special Purpose Vehicles**

**Date: 13/10/2022**  
**Time: 10.30am to 1:00pm**  
**Total Marks: 60**

**Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Draw neat and clean diagram.
4. Start new question on new page.

**Q.1 Objective Type Questions. (15)**

1. Define. JCB
2. Define. Excavator
3. List the different components of Crane.
4. List the different components of Fire truck.
5. Write the function of Harvester.
6. An articulated vehicle is a vehicle, which has a permanent or semi-permanent pivoting joint in its construction, allowing the vehicle to turn more sharply. (True/False)
7. Full form of PTO is Power Transmission Operation. (True/False)
8. A power shovel is a bucket equipped machine, usually electrically powered, used for digging and loading earth or fragmented rock and for mineral extraction. (True/False)
9. Cranes are mostly used for digging of soils and for loading dump trucks. (True/False)
10. Rollers are the construction equipment used for the compaction of soil, gravel, sand, crushed stone layers etc. (True/False)
11. When did the term “tractor” appeared first on record?  
 (A) 1973 (B) 1996 (C) 1890 (D) 1880
12. In order to raise and shift heavy loads from one place to another, the \_\_\_\_\_ are employed in the construction of big works.  
 (A) Elevators (B) Conveyors (C) Cranes (D) Trucks
13. The blade angle of bulldozer is usually  
 (A) 60 (B) 90 (C) 15 (D) 45
14. A \_\_\_\_\_ is very useful equipment and it can be used for construction work like to clear the site of work, to make the land level, etc.  
 (A) Scraper (B) Grader (C) Excavator (D) Bulldozer
15. Indian manufacture of tractors are  
 (A) Eicher (B) Escorts (C) Gujarat Tractor (D) All of the above

**Q.2 Answer the following questions. (Attempt any three) (15)**

- A) List the Different components of Forklift with function.
- B) Describe with neat sketch Steering system of tractor.
- C) Explain Difference between Rippers and Scrapers.
- D) Explain Constructional working features of Hovercraft.

**Q.3 A) Explain advantages and disadvantages of Wheel type and Track type vehicle. (07)**

- B) Explain Difference between Backhoe loader and Excavator. (08)

**OR**

- B) Explain Effects of noise, vibration and thermal stresses on human performance. (08)

**Q.4 A) Explain Constructional working feature of Dumper with Three Way Tipper Mechanism. (07)****OR**

- A) Write Short note on PTO of tractor. (07)

- B) Explain Basic characteristics of Hydraulic Truck Cranes. (08)