

Roll No. ....

Total No. of Pages : 2

Total No. of Questions : 09

**B.Tech. (AE) (Sem.-7,8)**  
**SPECIAL PURPOSE VEHICLES**  
**Subject Code : AE-410**  
**Paper ID : [A0728]**

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. **SECTION-A is COMPULSORY.**
2. **Attempt any FOUR questions from SECTION-B.**
3. **Attempt any TWO questions from SECTION-C.**

**SECTION-A**

**(10 × 2 = 20 Marks)**

1. Write briefly :
  - (a) How do you classify special purpose vehicle?
  - (b) What is the function of dumper?
  - (c) Why lubrication is necessary?
  - (d) What are articulated vehicles?
  - (e) What is a PTO shaft?
  - (f) What is a track type special purpose vehicle?
  - (g) Why shovels are called earth moving machinery?
  - (h) What is the use of hydraulic system in tractor?
  - (i) What do you understand by hydraulic control circuit?
  - (j) What is the function of draw bar?

**SECTION-B**

**(4 × 5 = 20 Marks)**

2. Explain the pneumatic control circuit of any special purpose vehicle.
3. Write the applications of wheel type vehicle.
4. Explain the drive line of tractor with line diagram.

5. What are different auxiliary systems employed in tractor? Discuss.
6. Discuss the design consideration for braking system in special purpose vehicle.

**SECTION-C**

**(2 × 10 = 20 Marks)**

7. Discuss the construction and working of Dozers.
8. Describe the control system and safety devices of mobile cranes.
9. Write a note on multi-axle vehicle.