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Time : 2 Hours**AUTO TRANSMISSION****Subject Code**

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Total No. of Questions : 23 (Printed Pages : 4)**Maximum Marks : 50**

- INSTRUCTIONS :**
- (i) There are four sections in the question paper (A, B, C & D) consisting of **23** questions.
 - (ii) In Section A there are eight questions of which Question Nos. **1** to **4** are Multiple Choice Questions, Question Nos. **5** & **6** are to be answered in *one* word, phrase or number and Question Nos. **7** & **8** are to be answered in *one* sentence each.
 - (iii) Attempt *all* the questions however internal choice is given for Question Nos. **20** & **23**.
 - (iv) Figures to the right indicate marks allotted to each question.
 - (v) Write the number of each question clearly on the answer book.

SECTION A

1. The gear which gives drive to the half shaft is called as 1
- Bevel pinion
 - Sun gear
 - Planet gear
 - Crown wheel

2. The Air bag propellant unit contains 1
- sodium azide and potassium nitrate
 - electrolyte and iron oxide
 - compressed air and nitrogen
 - carbon monoxide and nitrogen oxide
3. In order to cover more distance by outer wheel than inner wheel while taking turn, four wheelers are provided with 1
- gearbox
 - transfer box
 - overdrive
 - differential
4. The angle between the vertical line and the king pin central line in the plane of the wheel, when viewed from the side is called 1
- Caster angle
 - Camber angle
 - Toe-in
 - Toe-out
5. Name any *one* type of clutch that is used in two wheelers. 1
6. How many master cylinders are used in car braking system ? 1

7. Define Radial ply tyre. 1
8. Differentiate between Hotch kiss drive and Torque tube drive. (Write any *one* point.) 1

SECTION B

9. Give any *four* advantages of synchromesh gearbox. 2
10. List any *four* functions of gearbox. 2
11. List down any *four* components of single plate diaphragm clutch. 2
12. Define the following : 2
- (a) Wind Resistance
- (b) Rolling Resistance.
13. Explain the construction of Tubeless tyre. 2
14. State any *two* properties of hydraulic fluid used in hydraulic braking system. 2

SECTION C

15. Write *four* functions of the propeller shaft. Also give reason for using only one shackle in hotch kiss drive. 3
16. Draw a neat labelled diagram of Differential and state any *two* functions of it. 3
17. What do you mean by bleeding of hydraulic system ? Draw a neat labelled diagram of Wheel cylinder. 3

18. Explain the construction and working of Rack and Pinion steering system. 3
19. Write any *three* advantages of each of the following : 3
- (a) Placement of engine at the front
- (b) Placement of engine at the rear.
20. Distinguish between front independent suspension system and rear conventional suspension system. (Write any *six* points.) 3

Or

Explain any *three* types of leaf springs.

SECTION D

21. Draw a neat labelled diagram of Single plate diaphragm clutch and state any *four* requirements of clutch. 4
22. Explain the construction of Worm and Roller steering gear box with a neat labelled diagram. 4
23. With a neat labelled diagram explain the construction of Wish bone suspension system. 4

Or

Write a short note on construction of conventional leaf spring suspension system and draw a neat labelled diagram of it.