

GANPAT UNIVERSITY
B. TECH. SEM. VIII - MECHANICAL ENGINEERING
REGULAR EXAMINATION APRIL – JUNE 2015
2ME805/3 AUTOMOBILE ENGINEERING

Time: 3 HOURS

TOTAL MARKS: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Answers to the two sections must be written in separate answer books.

SECTION - I

- Q.1 (a) Define automobiles with its classifications. Also explain parts of automobile with sketch. [06]
- (b) Explain steering system with its layout. [06]

OR

- Q.1 (a) Describe the motion resistance forces on vehicles. Write in short on car body styles. [06]
- (b) Explain typical front axles with sketch. Also describe types of front axles. [06]
- Q.2 (a) Explain types of transmission system and main units of transmission system. [06]
- (b) List out types of gear boxes and explain automatic gear transmission system. [05]

OR

- Q.2 (a) List out types of universal joints. Also explain universal joint construction and working. [06]
- (b) Draw and explain final drive system with its classes. [05]
- Q.3 **Attempt any three.** [12]

- (a) Construction of frame with its material selection and defects in automobiles.
- (b) Hotchkiss type propeller shaft.
- (c) Wheel alignment.
- (d) Power steering with its types.

SECTION - II

- Q.4 (a) Describe truck air brake system with its layout. Also mentioned requirements of a good braking system. [06]
- (b) List out desirable tyre properties. Also explain types of tyres. [06]

OR

- Q.4 (a) Explain major components of typical automotive electrical system with sketch. [06]
- (b) List out types of batteries used in automobile. Also explain factors affecting battery life. [06]

- Q.5 (a) Explain fuel gauge circuit and directional signal circuit with sketch. [06]
(b) Discuss willan's line and morse test methods. [05]

OR

- Q.5 (a) Classify engine emissions. Discuss operating variables that decrease HC concentration from SI engine exhaust. [06]
(b) Explain typical air conditioning system used in car with its layout. [05]

- Q.6 **Attempt any three.** [12]
(a) Symbols used in electrical diagrams of automobiles.
(b) Zero emissions.
(c) Classify pollution norms and explain any one.
(d) List out mufflers types and explain any one.

END OF PAPER