

B.E./B.TECH. Degree Examination, December 2020

Seventh Semester

**AE16703 - TWO AND THREE WHEELERS**

(Regulation 2016)

Time: Three hours

Maximum : 80 Marks

Answer **ALL** questions

**PART A - (8 X 2 = 16 marks)**

1. The stroke of an engine in which the exhaust valve is fully closed.
  - a) Compression
  - b) Power
  - c) Both a & b
  - d) Exhaust
2. Full form for DTSi is
  - a) Dual Twin Spark ignition
  - b) Digital Twinspark Swirl induction
  - c) Digital Twin Spark ignition
  - d) Dual Turbo Stratified induction
3. The mechanical brakes are operated by means of
  - a) Levers
  - b) Bell cranks
  - c) Cams
  - d) All the above
4. Preferable method of maintenance for a three wheeler is
  - a) Breakdown maintenance
  - b) Scheduled maintenance
  - c) Preventive maintenance
  - d) All the above
5. Scavenging is necessary to engines. Yes, or No? Justify.
6. Enlist the advantages of fuel injection system over Carburetion system.
7. Decode the Tire Code: 110/90 R18 73 W.
8. Classify the three wheelers according to their construction and usage.

**PART B - (4 X16 = 64 marks)**

09. (a) Compare the constructional and functional difference between a two stroke and a four (16) stroke Compression Ignition Engine with the aid of neat sketches.

**(OR)**

- (b) Sketch and discuss in detail about the significance of an actual valve timing diagram over theoretical valve timing diagram. **(16)**

10. (a) With a help of the typical Fuel Injection Control and Delivery system, investigate in detail about the architecture of Electronic Fuel Injection system that are used in two wheelers. **(16)**

**(OR)**

- (b) Enlist the various types of ignition systems used in two wheelers. Identify the ignition system which uses the magnetic triggering device for controlling the ignition and explain in detail about it with a help of a neat sketch. **(16)**

11. (a) Illustrate the exploded view of the clutch assembly that is used in a typical motor cycles and explain its construction and working. **(16)**

**(OR)**

- (b) Investigate the swinging arm type rear suspension of a motor cycle and explain how the suspension spring rate may be varied in the vehicle. **(16)**

12. (a) Discuss in detail about the performance characteristics of any four motor cycles of same category from different manufacturer. Infer the best vehicle in your perspective. **(16)**

**(OR)**

- (b) Compare any two recent auto rickshaws of your own choice. With the aid of simplified sketch compare technically and discuss their unique features. **(16)**