

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

Fifth Semester B.Tech Degree Regular and Supplementary Examination December 2020

**Course Code: AU402****Course Name: TWO AND THREE WHEELERS**

Max. Marks: 100

Duration: 3 Hours

**PART A***Answer any three full questions, each carries 10 marks.*

Marks

- |   |  |      |
|---|--|------|
| 1 | a) Explain the scavenging process in two stroke engines?   | (2)  |
|   | b) Compare between SI and CI engines.  | (6)  |
|   | c) What is the need for valve timing diagrams in engines?  | (2)  |
| 2 | Explain with suitable sketches the working cycle of four stroke SI engine with the valve timing diagram. | (10) |
| 3 | a) What are the functions of lubricating systems in engines?   | (4)  |
|   | b) Explain with diagram the battery coil ignition system in 4-cylinder engine.                           | (6)  |
| 4 | Explain with sketches the working of wet and dry sump lubrication system.                                | (10) |

**PART B***Answer any three full questions, each carries 10 marks.*

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|---|---|------|
| 5 | a) What is the function of clutch?  | (2)  |
|   | b) Explain the construction and working of multiplate wet clutch with suitable diagram.                 | (8)  |
| 6 | Explain the gear box used in two wheelers and the gear transmission used with a neat sketch.            | (10) |
| 7 | Discuss different types of chassis layouts used in three wheelers.                                      | (10) |
| 8 | What are various meters and controls provided on the handle bar of a two wheeler? Explain them briefly. | (10) |

**PART C***Answer any four full questions, each carries 10 marks.*

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|---|---|-----|
| 9 | a) What do you mean by brake fading?  | (2) |
|   | b) Explain the construction and working of hydraulic braking system used in two wheelers with front disc brake. | (8) |

- 10 a) Give comparison of disc brake and drum brake. (5)  
b) Explain brake actuation mechanism used in mechanical systems. (5)
- 11 Explain the terms: (1) caster (2) rake (3) trail (4) steering angle (10)
- 12 Briefly explain service and maintenance schedule followed by any scooters. (10)
- 13 Discuss in detail the difference in salient features of Sports bike with normal use bike. (10)
- 14 Give a comparison of the features and performance of a new generation scooter and a motorcycle of comparable same engine capacity. (10)

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