

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SEVENTH SEMESTER B.TECH DEGREE EXAMINATION(R&S), DECEMBER 2019

Course Code: ME463

Course Name: Automobile Engineering

Max. Marks: 100

Duration: 3 Hours

PART A

Answer any three full questions, each carries 10 marks.

- | | | Marks |
|---|--|-------|
| 1 | a) With a neat sketch explain about turbo charging. | (6) |
| | b) Sketch a Piston ring in an IC engine. What are the functions of piston rings to perform in an engine? | (4) |
| 2 | a) Sketch and explain the function of a flywheel in an IC engine? | (5) |
| | b) Compare MPFI and CRDI systems | (5) |
| 3 | a) Sketch and explain the working of a synchromesh gear box | (5) |
| | b) With a neat sketch explain pull type diaphragm clutch. | (5) |
| 4 | a) Define overdrive. What are the advantages of overdrive? | (5) |
| | b) Explain the working of a fluid coupling with a neat sketch. | (5) |

PART B

Answer any three full questions, each carries 10 marks.

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|---|--|-----|
| 5 | a) With a neat diagram explain the working of a hydraulic rack and pinion steering system. | (6) |
| | b) List out the need of power steering system in a vehicle. | (4) |
| 6 | a) Explain caster in steering wheel alignment with a neat sketch. | (6) |
| | b) Explain Ackermann steering mechanism with a neat sketch. | (4) |
| 7 | a) Explain telescopic suspension with a neat sketch. | (5) |
| | b) With the help of a diagram explain short swing arm suspension. | (5) |
| 8 | a) List out the advantages and disadvantages of hydro pneumatic suspension. | (6) |
| | b) List out the functions of anti roll bars. | (4) |

PART C

Answer any four full questions, each carries 10 marks.

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| 9 | a) With a neat diagram explain the working of a disc brake system. | (8) |
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- b) What is the purpose of braking system? (2)
- 10 a) Explain mechanical braking system with sketch (6)
- b) What is braking efficiency? List out the factors affecting braking (4)
- 11 a) With a neat block diagram explain the working of pneumatic brake. (6)
- b) List out the advantages of ABS. (5)
- 12 a) What is the significance of aerodynamic lift in vehicles? (5)
- b) Explain the importance of under body dams in aerodynamic lift control of vehicle (5)
- 13 a) What is drag coefficient? (2)
- b) With neat sketches explain the drag coefficients of body shapes (8)
- i) sphere ii) cube iii) sixty degree cone iv) tear drop
- 14 a) Explain profile edge chamfering in vehicles sketches. (5)
- b) What is the need of a rear end spoiler in a vehicle? (5)
