A   Reg. No. :   ☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code: 94705

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2022

Fourth Semester

Mechanical Engineering

19UME405 - Automobile Engineering

(Regulations 2019)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The most popular drive at the drive axle for the passenger car is.   CO1- U

    (a) Straight bevel gear.   (b) Spiral bevel gear.

    (c) Worm gear drive.   (d) Hypoid drive.

2. The working cycle in case of four stroke engine is completed in   CO1- U
    following number of revolutions of crankshaft
    (a) 1/2   (b)1   (c) 2   (d)4

3. In a differential with a gear ratio of 4 : 1 the drive pinion would   CO1- U
    revolve four times to cause the ring gear to rotate.

    (a) 1 time.   (b) 2 times.   (c) 4 times.   (d) 6 times.

4. Which of the following provides the force to drive the pump   CO1- U

    (a) Crankshaft   (b) Differential   (c) Camshaft   (d) V-belt

5. In the hydraulic braking system, the piston in the master   CO1- U
    cylinder is connected by mechanical linkage to the

    (a) Wheel cylinders.   (b)Brake shoes.   (c)Brake pedal.   (d) Wheel pedal.

6. Which type of shock absorber absorbs shocks with the help of   CO1- U
    friction disc and spring

    (a) Hydraulic type   (b)Electrical type   (c)Mechanical type   (d) Pneumatic type

7. Which alcohol is used in racing car engine due to its high anti-knock   CO1- U
    rating?

    (a) Methanol   (b)Ethanol   (c) Propanol   (d) Butanol

8. The operation of forcing additional air under pressure in   CO1- U
the engine cylinder is known as

   (a) Scavenging   (b)Turbulence   (c)Supercharging   (d) Pre-ignition

9. Which of the given language is not commonly used for AI?   CO1- U

   (a) LISP   (b)PROLOG   (c)Python   (d) Perl

10. How many number of elements in the Open IoT Architecture?   CO1- U

   (a) 3 elements   (b)7 elements   (c)8 elements   (d) 6 elements

<div align="center">PART – B (5 x 2= 10 Marks)</div>

11. Explain the term Chassis   CO1- U

12. Explain the functions of transmission system.   CO1- U

13. Give a brief note on damper.   CO1- U

14. Explain fuel cell?   CO1- U

15. Explain Hybrid Car   CO1- U

<div align="center">PART – C (5 x 16= 80 Marks)</div>

16. (a) Explain the construction of chassis used in automobile with neat   CO1- U   (16)
sketch

<div align="center">Or</div>

   (b) Explain the various forces acting on the body and its   CO1- U   (16)
aerodynamics effects

17. (a) Explain the working of Rear Axle with neat sketches   CO2- U   (16)
<div align="center">Or</div>
   (b) Explain the working of Electronic Controlled Gasoline Injection   CO2- U   (16)
with neat sketches

18. (a) Explain the Steering process of Slip Angle & Over Steer with   CO3- U   (16)
neat sketches
<div align="center">Or</div>
   (b) Explain the working of Cam and Lever steering with neat   CO3- U   (16)
sketches

19. (a) Explain the use of biodiesel in automobile?   CO4- U   (16)
<div align="center">Or</div>
   (b) What is a fuel cell vehicle? Discuss the working principle of a   CO4- U   (16)
fuel cell car in details

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20. (a) Explain the importance of hybrid vehicles and electric vehicles. CO5- U (16)

Or

(b) Explain the working of multi terrain vehicles and Autonomous vehicles. CO5- U (16)

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