A

Reg. No. : | | | | | | | | | | |

Question Paper Code: 59703

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Elective

Mechanical Engineering

15UME903 - AUTOMOBILE ENGINEERING

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

PART A - (10 x 1 = 10 Marks)

1. A diesel engine is generally more efficient than a petrol engine because of CO1- R

   (a) proper air fuel mixer and combustion

   (b) high calorific value of diesel fuel

   (c) knock free operation

   (d) high compression ratio

2. The firing order for an in-line four cylinder I.C. engine is CO1 -R

   (a) 1-2-3-4 (b) 1-3-4-2 (c) 1-2-4-3 (d) 1-3-2-4

3. Multi point fuel injection system uses CO2- R

   (a) manifold injection

   (b) direct injection

   (c) port injection and throttle body injection

   (d) port injection only

4. The turbo chargers uses CO2- R

   (a) Engine energy (b) energy of exhaust gases

   (c) steam energy (d) water energy from radiator

5. ----------provides a smooth means of disengagement and engagement between the engine and the remainder of transmission system CO3- R

(a) clutch (b) gear box (c) propeller shaft (d) differential

6. The arrangement in which road springs act as torque and thrust members is known as CO3- R

(a) Hotchkiss drive (b)Torque tube drive (c) road spring drive (d) differential

7. When brakes are applied on a moving vehicle; the kinetic energy is converted to CO4- R

(a) Mechanical energy (b) Heat energy

(c) Electrical energy (d) Potential energy

8. Dead axles are CO4- R

(a) beams which supports the vehicle weight

(b) usually the rear axles

(c) contain differential

(d) Leaf springs

9. A vehicle is said to be hybrid if CO5- R

(a) It runs on electricity

(b) It uses two (or more) distinct power sources to propel the vehicle

(c) It generates electricity when it brakes

(d) It run on gas

10. Methanol by itself is not a good CI engine fuel because CO5- R

(a) its octane number is high and cetane number is low

(b) its cetane number is zero

(c) its octane number is zero

(d) Both octane and cetane numbers are high

PART – B (5 x 2= 10Marks)

11.		Explain the main causes of aerodynamic drag	CO1- R	
12.		State the functions of a Battery in automobile	CO2 -R	
13.		Give the function of overdrive.	CO3- R	
14.		Define brake efficiency.	CO4 -R	
15.		Define fuel cell	CO5- R	

PART – C (5 x 16= 80Marks)

16.	(a)	(i) Classify automobiles. Explain in detail	CO1- U	(8)
		(ii) Outline with a neat sketch of the engine chassis and indicate the parts	CO1- U	(8)
		Or		
	(b)	Discuss the various components of engine and their functions with sketch	CO1 -Ana	(16)
17.	(a)	Explain the construction and working of a catalytic converter with sketch	CO2 -U	(16)
		Or		
	(b)	Explain the working of battery,magneto and electronic ignition system with neat sketch	CO2 -Ana	(16)
18.	(a)	Explain the necessary of a differential in an automobile. Discuss in detail the construction and operation of the differential	CO3- Ana	(16)
		Or		
	(b)	Elaborate the reason for using multiplate clutches. Explain the constructional details and working with neat sketch	CO3 -Ana	(16)
19.	(a)	Discuss about Ackermann steering mechanism and its working.	CO4- U	(16)
		Or		
	(b)	Explain the working of antilock braking system	CO4 -Ana	(16)

20.	(a)	With a sketch explain LPG fuel feed system and compare the LPG and petrol as fuel for SI engine	CO5- U	(16)
		Or		
	(b)	Explain the power flow and working of a hybrid vehicle.	CO5 -U	(16)