

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

Third Semester

AE 16301 Automotive engines

(Regulation 2016)

Time: Three hours

Maximum : 80 Marks

Answer **ALL** questions

PART A - (8 X 2 = 16 marks)

1. The stroke of an engine is the
 - (A) Volume of the cylinder
 - (B) Length of the connecting rod
 - (C) Internal diameter of the cylinder
 - (D) Distance between top dead centre and Bottom dead centre
2. When is the lean air-fuel mixture needed?
 - (A) During starting
 - (B) During idling
 - (C) During acceleration
 - (D) During cruising
3. If the temperature of intake air in internal combustion engine increases, then its efficiency will
 - (A) Remain same
 - (B) Decrease
 - (C) Increase
 - (D) None of these
4. The operation of forcing additional air under pressure in the engine cylinder is known as
 - (A) Scavenging
 - (B) Turbulence
 - (C) Supercharging
 - (D) Pre-ignition
5. Is there any effect of octane number in the properly of diesel fuel? If Yes brief.
6. Write the name of the system which is used to recover the heat from the engine.
7. If thermal efficiency of an engine is 25 percent, what does it mean?
8. Name the vehicles that are lubricated by mist lubrication method

PART B - (4 X16 = 64 marks)

09. (a) Derive an expression for air standard thermal efficiency of an otto cycle (16)
(OR)
- (b) (i) Differentiate between Spark ignition engine and Compression ignition engine (8)
based on the construction details.
- (ii) Write a short note on modern automotive engine. (8)
10. (a) What is the equation applied to understand the basic working principle of a simple (16)
carburetor? Briefly explain the working details of the carburetor with the equation.
(OR)
- (b) Design a modern diesel fuel system used in compression ignition engine (16)
11. (a) Design a system to increase the brake power of an engine without increasing the size (16)
of the engine. Also, briefly explain the working of the system.
(OR)
- (b) How is an engine tested in a test rig? Briefly explain the testing procedure with a (16)
neat sketch.
12. (a) Design and explain a system to reduce/maintain the combustion chamber (16)
temperature of an engine.
(OR)
- (b) Design a lubrication system if a vehicle is equipped with 50CC engine. State the (16)
proper justification for the lubrication system that is designed by you for 50 CC
engine.