CBCS SCHEME

USN | | | | | | | | | | |

BAU301

Third Semester B.E./B.Tech Degree Examination, Dec.2024/Jan.2025
Automotive Engines

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Explain with a neat sketch construction and working of two strokes SI engine.	10	L2	CO3
	b.	Anlayse the theoretical and actual valve timing diagram for a four stroke SI engine and explain.	10	L4	CO2
		OR			
Q.2	a.	Explain the working of diesel cycle, illustrate with suitable diagram and equations.	10	L2	CO2
	b.	Derive an expression for thermal efficiency and mean effective pressure for otto cycle.	10	L4	CO3
		Module – 2			
Q.3	a.	With a neat sketch explain the common rail free injection system.	10	L2	CO2
	b.	What is the function of carburetor? Explain with a neat sketch the operation of a simple fixed venture carburetor.	10	L2	CO3
		OR			
Q.4	a.	Explain the importance of the injection pump governor. With a neat sketch explain any one type of injection pump governor.	10	L2	CO2
	b.	With a neat diagram, explain electronic fuel injection system.	10	L2	CO3
		Module – 3			
Q.5	a.	Analyze the stages of combustion in SI engine illustrate with suitable diagram.	10	L2	CO3
	b.	What is ignition log? Utilize your knowledge to analyse the factors affecting the ignition lay in SI engine.	10	L5	CO3
		OR			
Q.6	a.	Explain the phenomenon of knocking in CI engine. What are the methods to control diesel knock.	10	L2	CO3
	b.	Explain the effect of engine variables on flame propagation in brief.	10	L3	CO3
		Module – 4			
Q.7	a.	With a neat sketch explain forced circulation cooling system, also explain the various components included in the cooling system.	10	L2	CO4
	b.	Sketch and explain waste gate method of controlling turbochargers.	10	L3	CO4
		OR			
Q.8	a.	Discuss the centrifugal type supercharger state the effects if super charger on engine.	10	L2	CO4
	b.	Describe the following water cooling system with a neat sketches : i) Thermo – Syphon cooling ii) Thermostat cooling.	10	L3	CO4
		Module – 5			
Q.9	a.	Demonstrate the concept of the dry sump lubrication system with a neat diagram.	10	L3	CO4
	b.	Illustrate BIS standards for fuels and lubricants.	10	L2	CO5
		OR			
Q.10	a.	Apply four knowledge to analyse the cetare and octare number of fuels.	10	L3	CO4