	DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE **Winter Examination – 2022** **Course: B. Tech. Branch :Mechanical Semester : V** **Subject Code & Name: BTAPE504D Automobile Engineering** **Max Marks: 60 Date: 08/02/2023 Duration: 3 Hr.**		
	Instructions to the Students: *1. All the questions are compulsory.* *2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.* *3. Use of non-programmable scientific calculators is allowed.* *4. Assume suitable data wherever necessary and mention it clearly.*		
		(Level/ CO)	Marks
Q. 1	**Solve Any Two of the following.**		**12**
A)	Explain the detailed classification of automobile.	CO1	**6**
B)	What are the main components of automobile? Explain any one of them.	CO1	**6**
C)	Explain different engine cylinder arrangements with neat sketches.	CO1	**6**
Q.2	**Solve Any Two of the following.**		**12**
A)	With the help of neat sketch describe steering linkage for rigid axle suspension.	CO2	**6**
B)	Define the steering geometry angles: Camber, king pin inclination, Caster, toe-in and toe-out on turns.	CO2	**6**
C)	Write down the functions and requirements of suspension system.	CO2	**6**
Q. 3	**Solve Any Two of the following.**		**12**
A)	Explain the working of single plate clutch with a neat diagram.	CO2	**6**
B)	What is the purpose of gear box? Explain the sliding mesh gear box.	CO3	**6**
C)	Write a note on stub axles.	CO2	**6**
Q.4	**Solve Any Two of the following.**		**12**
A)	Explain the working of hydraulic brake with a neat sketch.	CO2	**6**
B)	Draw a schematic diagram showing the layout of air brake system and explain functions of its main units.	CO2	**6**
C)	Write down the tyre-specification with meaning of each terms: **185 / 75 R14 82 S**	CO4	**6**
Q. 5	**Solve Any Two of the following.**		**12**
A)	Explain the construction and operation of lead acid battery with a neat sketch.	CO2	**6**
B)	Explain Standard Bendix drive with neat sketch.	CO3	**6**

C)	Write a short note on engine emissions.	CO5	**6**
	***** End *****		