

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE Supplementary Examination – Summer 2022 Course: B. Tech. Branch : Electrical Engineering Semester :III Subject Code & Name: FLUID MECHANICS & THERMAL ENGINEERING (BTEEC303) Max Marks: 60 Date: 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 <u>Two</u> of the following.		
A)	Define the following fluid properties; i) Density, ii) Specific volume iii) Specific gravity	CO1	6
B)	Determine the viscosity of a liquid having kinematic viscosity 6 stokes and specific gravity 1.9	CO1	6
C)	Explain the phenomenon of capillarity. Obtain an expression for capillarity rise of a liquid.	CO1	6
Q.2	Solve Any <u>Two</u> of the following.		
A)	Derive Darcy-Weisbach Equation.	CO2	6
B)	Explain with neat sketch Construction and working of centrifugal pump.	CO2	6
C)	Explain With suitable sketch the working of four stroke cycle SI engine.	CO3	6
Q. 3	Solve Any <u>Two</u> of the following.		
A)	Explain First law and second law of thermodynamics with example.	CO3	6
B)	Explain Construction and working of single stage Air compressor.	CO3	6
C)	Explain Construction and working of open cycle gas turbine.	CO2	6
Q.4	Solve Any <u>Two</u> of the following.		
A)	What is the difference between rotary and reciprocating compressor? Describe with neat sketch reciprocating compressor.	CO4	6
B)	Explain working vapor compression refrigeration system.	CO4	6
C)	Enlist the properties of good refrigerant. Give names of normal refrigerants used.	CO4	6

Q. 5	Solve Any <u>Two</u> of the following.		
A)	What are the various applications of air conditioning in various field.	CO4	6
B)	Define the terms Specific Humidity, relative humidity and due point temperature. Draw psychometric chart.	CO4	6
C)	Explain the following psychometric processes; i) Sensible cooling, ii) Sensible Heating iii) Humidification and dehumidification.	CO4	6
*** End ***			

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