GUJARAT TECHNOLOGICAL UNIVERSITY
B.VOC. –SEMESTER 1(NEW SYLLABUS) EXAMINATION- WINTER 2018

Subject Code: 1110302   **Date: 17-01-2019**
Subject Name: General Mechanical Engineering - II
Time: 10:30 AM to 12:30 PM   **Total Marks: 50**

Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

			Marks
Q.1	**(a)**	Define following terms: (any five)	**05**
		1. Force 2. Weight 3. Pressure 4.Work 5. Power 6. Specific Heat Capacity	
	(b)	State first law of thermodynamics. State its limitations.	**05**
Q.2	**(a)**	Define thermodynamic system. Explain types of system with examples.	**05**
	(b)	Explain Carnot Cycle.	**05**

OR

	(b)	Derive the equation of workdone of Isothermal Process.	**05**
Q.3	**(a)**	Expain 4-stroke Petrol (SI) engine with neat sketch.	**05**
	(b)	Give Difference between 2-stroke and 4- stroke engine.	**05**

OR

Q.3	**(a)**	During testing of 4 cylinder 2-stroke petrol engine, following data is obtained: Brake Power = 24 kW, Mechanical efficiency (η_{mech}) = 80%. Calculate the diameter and stroke of each of the cylinder if L/D = 1.5	**05**
	(b)	The following reading were taken during the test of two stroke single cylinder petrol engine :	**05**

Engine torque = 650 Nm
Engine speed = 400 rpm
Cylinder Diameter = 20 cm
Stroke length = 30 cm
Fuel consumption = 8.5 kg/hr
Mean effective pressure = 5.5 bar
Calorific value of the fuel = 42500 kJ/kg
Calculate: (i) Mechanical efficiency (i) indicated thermal efficiency (ii) brake thermal efficiency.

Q.4	**(a)**	Draw only neat sketch of Babcock & Wilcox Boiler.	**05**
	(b)	Explain in brief any five :- (1) Pressure Gauge (2) Safety Valve (3) Feed Check Valve (4) Blow off Cock (5) Compression ratio (6) Scavenging (7) Flywheel,	**05**

OR

Q.4	**(a)**	Define Boiler. Give the difference between Fire tube boiler and Water tube boiler.	**05**
	(b)	Explain condensing plant by using its different elements.	**05**
Q.5	**(a)**	State the Function of Steam Turbine. Classify Steam Turbine.	**05**
	(b)	Compare Steam and Gas Turbine.	**05**

OR

Q.5	**(a)**	Give the difference between Impulse and Reaction Turbine.	**05**
	(b)	Explain Working Principle of Gas Turbine and Give the Classification of Open cycle and Closed Cycle Gas turbine.	**05**

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