



PRESIDENCY UNIVERSITY

BENGALURU

Roll No.																			
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Make Up Examinations – December 2025

Date: 26 – 12- 2025

Time: 9:30am – 12:30pm

School: SOE AND SOCSE	Program: B.Tech		
Course Code: CIV1008	Course Name: Basic Engineering Science		
Semester: MK	Max Marks: 100	Weightage: 50%	

CO - Levels	C01	C02	C03	C04	C05
Marks	2	4	28	26	40

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks.

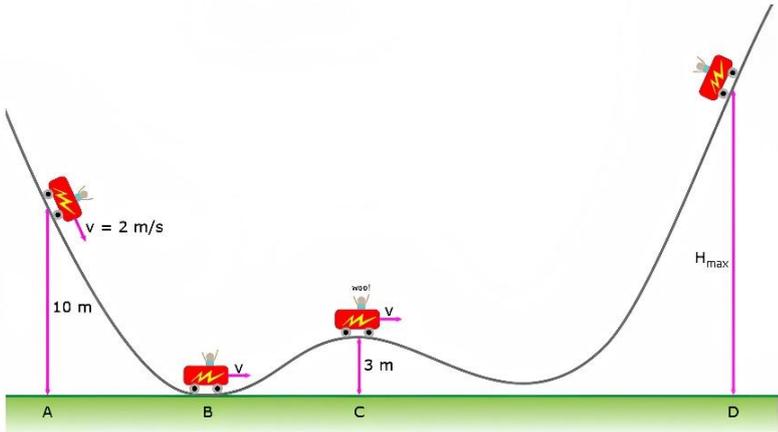
10Q x 2M=20M

1.	List the different components of buildings.	2 Marks	L1	C01
2.	List any two advantages of precast concrete.	2 Marks	L1	C02
3.	What is BIM? List 2 benefits of BIM.	2 Marks	L1	C02
4.	What is an external combustion engine, and an internal combustion engine	2 Marks	L1	C03
5.	What is the law of conservation of energy	2 Marks	L1	C03
6.	What is non-renewable energy? List some non-renewable energy sources.	2 Marks	L1	C03
7.	List the IC engines based on the type of fuel used.	2 Marks	L1	C03
8.	What is a source rock in an oil and gas formation	2 Marks	L1	C04
9.	Define the term Kerogen	2 Marks	L1	C04
10.	List any four types of petroleum products derived from crude oil.	2 Marks	L1	C04

Part B

Answer the Questions.

Total Marks 80M

11.	a.	<p>A cart travels along a frictionless roller coaster track. At point A, the cart is 10 m above the ground and traveling at 2 m/s. Calculate the following</p> <ol style="list-style-type: none"> i. Velocity at point B when the cart reaches the ground. ii. Velocity of the cart at point C when the cart reaches a height of 3 m. iii. The maximum height the cart can reach before it stops. 	10 Marks	L3	CO3
					
	b.	<p>What is a pump? Explain the working Principle of Impeller type centrifugal pumps?</p>	10 Marks	L2	CO3

Or

12.	a.	<p>Calculate the electricity bill amount for a month of 28 days, if the following devices are used as specified:</p> <ol style="list-style-type: none"> i. 3 bulbs of 40 watts for 6 hours ii. 4 tube lights of 80 watts for 7 hours iii. 5 fans of 80 watts for 4 hours iv. 1 fridge of 300 watts for 24 hours <p>Given the rate of electricity is 2 Rs. per unit.</p>	10 Marks	L3	CO3
	b.	<p>What is a compressor? Explain the working Principle of reciprocating-type air compressors?</p>	10 Marks	L2	CO3

13.	a.	<p>Explain the three key sectors of the petroleum industry based on the primary activities involved in each sector.</p>	10 Marks	L2	CO4
	b.	<p>List the key differences between Onshore and Offshore key E&P activities.</p>	10 Marks	L2	CO4

Or

14.	a.	List and describe the main stages of the upstream oil and gas life cycle, explaining the purpose of each stage.	10 Marks	L2	C04
	b.	List the key areas of digitalization in the petroleum industry. Also mention any five benefits.	10 Marks	L2	C04

15.	a.	In a machining experiment, tool life was found to vary with the cutting speed in the following manner. What is the percentage increase in tool life when the velocity is halved?	10 Marks	L3	C05						
		<table border="1"> <thead> <tr> <th>Cutting speed (m/min)</th> <th>Cutting speed (m/min)</th> </tr> </thead> <tbody> <tr> <td>60</td> <td>81</td> </tr> <tr> <td>90</td> <td>36</td> </tr> </tbody> </table>				Cutting speed (m/min)	Cutting speed (m/min)	60	81	90	36
Cutting speed (m/min)	Cutting speed (m/min)										
60	81										
90	36										
	b.	Explain the Brazing process in detail. Differentiate between the soldering and brazing processes.	10 Marks	L2	C05						

Or

16.	a.	Explain the types of metal forming processes by plastic deformation.	10 Marks	L2	C05
	b.	Define electric arc welding. Explain the principle, working, and application of electric arc welding in detail.	10 Marks	L2	C05

17.	a.	Briefly explain the evolution of Industry 1.0 to Industry 4.0	10 Marks	L2	C05
	b.	Distinguish between welding and Soldering processes.	10 Marks	L2	C05

Or

18.	a.	Explain in detail the Soldering Process. Also, differentiate between the 2 types of solders.	10 Marks	L2	C05
	b.	What is additive manufacturing? Write the key differences between additive and subtractive manufacturing.	10 Marks	L2	C05