# P P SAVANI UNIVERSITY

**Backlog Examination**
**December 2022**
**SECV1040 Basics of Civil & Mechanical Engineering**

09.12.2022, Friday          Time: 01:00 P.m. To 3:30 p.m.          Maximum Marks: 60

*Instructions:*
1. The question paper comprises of two sections.
2. Make suitable assumptions and draw neat figures wherever required.
3. Use of scientific calculator is allowed.

## SECTION – I

|  |  |  | CO | BTL |
|---|---|---|---|---|
| Q – 1 | Discuss the scope and role of civil engineers. | [05] | 3 | 1 |
| Q – 2 (a) | Differentiate between prismatic and surveyor compass. | [05] | 4 | 1 |
| Q – 2 (b) | Covert the following bearings. | [02] | | |
| | 1. 235° | | | |
| | 2. N 65° W | | | |
| Q – 3 (a) | Write down the properties of good bricks. | [05] | 3 | 1 |
| Q – 3 (b) | Enlist the types of cement. | [03] | | |
| Q – 4 | Enlist the equipment used in the hauling and hoisting. | [05] | 4 | 1 |
| Q – 5 | Discuss your views on green buildings. | [05] | 4 | 1 |

## SECTION – II

|  |  |  | CO | BTL |
|---|---|---|---|---|
| Q - 1 | **Answer the Following:** | [05] | | |
| (i) | Define: Specific Heat | | 1 | 1 |
| (ii) | Clarify the 1st law of Thermodynamics | | 1 | 1 |
| (iii) | Classify Fuels. | | 2 | 2 |
| (iv) | Identify the use of Heat engine | | 3 | 1 |
| (v) | List the different accessories of the boiler | | 2 | 2 |
| Q - 2 (a) | Discuss the types of Thermodynamic system with neat sketch. | [05] | 1 | 2 |
| Q - 2 (b) | Explain Locomotive boiler with neat sketch. | [05] | 2 | 2 |
| | OR | | | |
| Q - 2 (a) | Discuss the function of any Five boiler Mountings. | [05] | 2 | 1 |
| Q - 2 (b) | List the non-convectional sources of energy. Prepare a short note on solar energy. | [05] | 2 | 2 |
| Q - 3 (a) | Discuss the construction and working of four stroke Petrol engine. | [05] | 3 | 2 |
| Q - 3 (b) | Give the classification of Gears and explain any 2 with neat sketch | [05] | 4 | 2 |
| | OR | | | |
| Q - 3 (a) | Compare the Gear drive vs Belt drive. | [05] | 4 | 4 |
| Q - 3 (b) | Compare 2-stroke and 4-stroke engines. | [05] | 3 | 4 |
| Q - 4 | **Attempt anyone.** | [05] | | |
| (i) | Using neat sketch explain the working of any one brake in detail. | | 4 | 5 |
| (ii) | Using neat sketch explain the working of any one clutch in detail. | | 4 | 5 |

CO      : Course Outcome Number          BTL      : Blooms Taxonomy Level

Level of Bloom's Revised Taxonomy in Assessment

| 1: Remember | 2: Understand | 3: Apply |
|---|---|---|
| 4: Analyze | 5: Evaluate | 6: Create |