

**Question Paper Code : 60020**

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2022

Second Semester

Electrical and Electronics Engineering

BE 3255 – BASIC CIVIL AND MECHANICAL ENGINEERING

(Common to Electronics and Instrumentation Engineering/  
Environmental Engineering/Instrumentation and Control Engineering)

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the components of National Building Code?
2. What does Environmental engineering deals with?
3. What are the constituents of a Bricks?
4. What are the instruments used for levelling?
5. What is a culvert?
6. What are the tools used for dressing of stones?
7. What is SI engine?
8. Define Centrifugal Pump.
9. Name commonly used refrigerants.
10. What is psychrometry?

PART B — (5 × 13 = 65 marks)

11. (a) Discuss the good planning activities of Smart city infrastructure development.

Or

- (b) Discuss different methods of Roof top rainwater harvesting.

12. (a) Show with neat sketches the characteristic features of contour lines. What are the uses of a contour map?

Or

- (b) List and discuss few physical and mechanical properties of building materials?

13. (a) Discuss any two types of foundations of a building.

Or

- (b) List the factors for the selection of a suitable site for a concrete dam.

14. (a) Discuss the differences between Fire-tube and Water-tube boilers.

Or

- (b) Discuss the layout of a steam power plant and function of each component.

15. (a) Draw the layout diagram of a typical domestic refrigerator and explain the working of its various components.

Or

- (b) Draw the layout diagram of a typical window air-conditioner and explain the working of its various components.

PART C — (1 × 15 = 15 marks)

16. (a) With suitable case study, explain in detail about the Automation Process in Automobile Industry.

Or

- (b) Explain in detail about the measurement of land with different survey instruments in real world practical condition.