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**Question Paper Code : 57412**

**B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016**

**Second Semester**

**Electrical and Electronics Engineering**

**GE6251 – BASIC CIVIL AND MECHANICAL ENGINEERING**

**(Common to Electronics and Instrumentation Engineering, Instrumentation and Control Engineering**

**(Regulations 2013)**

**Time : Three Hours**

**Maximum : 100 Marks**

**Answer ALL questions.**

**PART – A (10 × 2 = 20 Marks)**

1. What is a Pedometer ?
2. Mention two advantages of Reinforced concrete.
3. Mention two unique features of a Flemish bond.
4. Define modulus of Rigidity.
5. Differentiate between Thermal and Hydro electric power.
6. What is meant by Greenhouse effect ?
7. Define compression ratio of a IC engine.
8. Mention two disadvantages of a single jet carburettor.
9. Define Relative humidity.
10. Mention two differences between Unitary and Centralised air conditioning systems.

**PART – B (5 × 16 = 80 Marks)**

11. (a) (i) Differentiate between Simple levelling and Differential levelling with sketches. (8)  
(ii) State the various properties and uses of concrete. (8)  
**OR**
- (b) (i) Brief the quality requirement of brick. (8)  
(ii) Explain the necessary qualities of a good stone. (8)
12. (a) (i) A steel rod of 25 mm diameter and 1 m length is subjected to an axial pull of 100 kN. Determine the Stress, Strain and Elongation of the rod. Take  $E = 2 \times 10^5 \text{ mm}^2$ . (8)  
(ii) Sketch and explain the various parts of a deck bridge. (8)  
**OR**
- (b) (i) Compare the brick & stone masonries. (8)  
(ii) Explain the various defects that are observed in Plastering. (8)
13. (a) (i) With a neat sketch, explain the working principle of a closed cycle gas turbine. (8)  
(ii) Differentiate between Fire tube and Water tube boilers. (8)  
**OR**
- (b) (i) With a neat sketch, explain the working principle of a Cochran Boiler. (12)  
(ii) Differentiate between Impulse and Reaction Turbines. (4)
14. (a) (i) Explain the working principle of a 2 stroke diesel engine. (8)  
(ii) Differentiate between Petrol and Diesel engines. (8)  
**OR**
- (b) (i) Explain the working principle of a 2 stroke petrol engine. (12)  
(ii) What are the main functions of a Carburettor. (4)
15. (a) (i) Explain the working principle of a Window air conditioner. (10)  
(ii) Differentiate between Unitary and Centralized Air-conditioning systems. (6)  
**OR**
- (b) (i) Explain the working principle of a domestic refrigerator unit. (10)  
(ii) Differentiate between Vapour compression & Vapour absorption systems. (6)