

Reg. No. :

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**Question Paper Code : 51515**

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2014.

Second Semester

Electrical and Electronics Engineering

GE 2152/080510002/GE 1151 A/ME 26/10111 CE 206 — BASIC CIVIL AND  
MECHANICAL ENGINEERING

(Common to Electronics and Communication Engineering, Biomedical Engineering,  
Electronics and Instrumentation Engineering, Computer Science and Engineering,  
Instrumentation and Control Engineering and Information Technology)

(Regulation 2008/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the primary types of surveying?
2. Define safe bearing capacity of soil.
3. What are the qualities of good brick?
4. Differentiate between shallow foundation and deep foundation.
5. Write down the working principle of Nuclear power plant.
6. Mention the function of fly wheel in engines.
7. Differentiate between two stroke and four stroke engines.
8. What is meant by scavenging in two stroke engines?
9. Define relative humidity.
10. Define the term TR (Tone of refrigeration).

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain with a neat sketch prismatic compass surveying. (12)  
(ii) What are the various types of bricks based on quality? (4)

Or

- (b) State the properties and uses of Sand, Cement, concrete and Steel sections. (16)

12. (a) Draw the following bridges and name their parts

- (i) Reinforced concrete slab culvert. (4)  
(ii) Pre-stressed concrete bridge. (4)  
(iii) Discuss briefly about the Internal and External forces on Superstructure. (8)

Or

- (b) Convert the following Whole Circle Bearing into Reduced Bearing : (16)

- (i)  $66^{\circ} 30'$  (ii)  $130^{\circ} 15'$   
(iii)  $205^{\circ} 30'$  (iv)  $265^{\circ} 10'$   
(v)  $295^{\circ} 30'$  (vi)  $320^{\circ} 15'$

13. (a) Draw and name the parts of a Centrifugal Pump and explain its working. (16)

Or

- (b) (i) Draw a sketch of a single acting reciprocating pump. (8)  
(ii) List the components and briefly explain their functions. (8)

14. (a) (i) Explain the forced - circulation water cooling system in I.C engine. (10)  
(ii) List out the advantages of petrol lubrication system. (4)  
(iii) Define : Compression ratio. (2)

Or

- (b) (i) Write in detail about the working principle of two stroke cycle Engine. (8)  
(ii) Briefly discuss – Boiler as a power point. (8)

15. (a) Draw the sketch of vapour absorption refrigeration system and list out the components and their functions. (16)

Or

- (b) Write short notes on Window and split air conditioner. (16)