



**KC-6003**

**B. E. I (Sem. I) Examination**  
**November/December – 2012**  
**Basic Mechanical System**

Time : 3 Hours]

[Total Marks : 100

**Instructions :**

(1)

नीचे दृष्टावेव निशानीवाणी विगतो उन्तरवडी पर अवश्य लपवी.  
Fillup strictly the details of signs on your answer book.

Name of the Examination :  
B. E. I (Sem. I)

Name of the Subject :  
Basic Mechanical System

Subject Code No. : 6 0 0 3 Section No. (1, 2,.....): Nil

Seat No. :

Student's Signature

(2) Attempt all questions.

(3) Figures to the right indicate full marks.

- 1 (a) Explain with neat sketch working of Hydro Power Plant. 7
- (b) Explain with neat sketch working of Lancashire Boiler. 8
- 2 Attempt any three : 18
- (a) Derive an equation for minimum air requirement for complete combustion of liquid fuel.
- (b) List out any ten merits of mechanical draft over natural draft.
- (c) What are the difference between boiler mountings and its accessories ?
- (d) What is the purpose of a Fusible Plug ? Explain its working.
- 3 (a) Derive an efficiency equation for Diesel cycle in the form of compression ratio. Also draw a P-V diagram for the Diesel cycle. 7
- (b) What are the merits and demerits of Diesel Engines over Petrol Engines ? 5

- (c) Explain with neat sketch the working of Fuel Pump. 5
- OR**
- (c) Explain with neat sketch the working of Ignition circuit for multi cylinder engine. 5
- 4 (a) Explain with neat sketch working of Vapour Absorption Refrigeration Cycle. 8
- (b) What are the requirements of a good refrigerant ? Also write merits and demerits of F-12 over NH<sub>3</sub>. 7
- 5 (a) Describe in brief Drilling Machine with diagram. 8
- (b) Explain the Crank and Slotted Mechanism of a shaper. Also draw a neat sketch. 7
- OR**
- (b) Describe Face Milling and Straddle Milling Processes with neat sketch. 7
- 6 (a) Explain window type air conditioning with neat sketch. 8
- (b) Write short note on Taper turning methods in Lathe. 6
- (c) Write a short note on Types of Drills. 6
- OR**
- (c) Write a short note on Indexing. 6
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