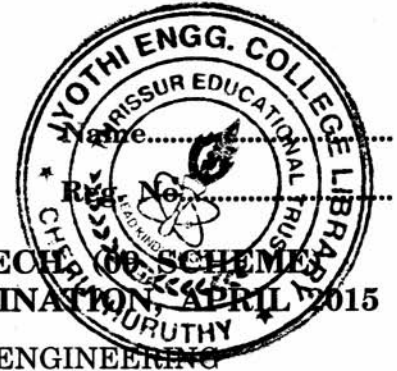


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(Pages : 2)



COMBINED FIRST AND SECOND SEMESTER B.TECH (ENGINEERING) DEGREE [SUPPLEMENTARY] EXAMINATION, APRIL 2015

EN 09 106—BASICS OF CIVIL AND MECHANICAL ENGINEERING

Time : Three Hours

Maximum : 70 Marks

Section I and Section II are to be answered in **separate** answer-books.

Section I (Basics of Civil Engineering)

Part A

Answer **all** questions.

1. Define beam and column. (2 marks)
2. Define Benchmark and state its effects. (2 marks)
3. Differentiate between Map and Plan. (1 mark)

Part B

Answer any **two** questions.

4. What is bearing capacity of soil ? How will it affect the selection of foundation ?
5. Explain about any *five* types of cement.
6. What are the common errors that may occur in chaining ?

[2 × 5 = 10 marks]

Part C

Answer Section (a) **or** Section (b) of each question

7. (a) Explain the methods adopted for chaining on sloping grounds.

Or

- (b) What are the instruments used in chain surveying ? Explain each of them.

8. (a) Explain the properties of cement concrete.

Or

- (b) Draw the plan and elevation of 1½ brick thick wall in English and Flemish bond.

(2 × 10 = 20 marks)

Turn over

Section II (Basics of Mechanical Engineering)**Part A**

Answer all questions.

1. What do you understand by scavenging ? (2 marks)
2. Define the term : Compression ratio. (2 marks)
3. Classify the hydropower plant. (1 mark)

Part B

Answer any two questions.

4. Explain the principle of operation of impulse and reaction hydraulic turbines.
5. Explain working principle of gas turbine power plants with neat sketch.
6. Explain closed die forging process with neat sketch.

(2 × 5 = 10 marks)

Part C

Answer Section (a) or Section (b) of each question.

7. (a) What are the advantages and disadvantages of the following power plants ?
(i) Steam power plant ; and (ii) Nuclear power plant.

Or

- (b) Explain the working principle of solar and wind power plant.
8. (a) Explain the working principle of reciprocating and centrifugal pumps with neat sketch.

Or

- (b) Define extension process and classify extrusion process.

(2 × 10 = 20 marks)