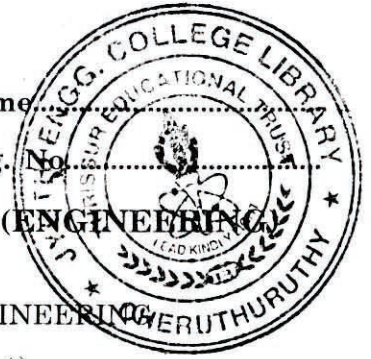


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Name

Reg. No.



**COMBINED FIRST AND SECOND SEMESTER B.TECH. (ENGINEERING)
DEGREE EXAMINATION, APRIL 2013**

EN 09 106—BASICS OF CIVIL AND MECHANICAL ENGINEERING

(2009 Scheme—Regular/Supplementary/Improvement)

Time : Three Hours

Maximum : 70 Marks

*Answer Section I and Section II are to be answered in **separate** answer-books.
Assume suitable data wherever necessary.*

Section I (Basics of Civil Engineering)

PART A

Answer all questions.

1. Give the classification of surveying based on the instruments used. (2 marks)
2. What are the constituents of brick ? (2 marks)
3. State the uses of cement. (1 mark)

PART B

Answer any two questions.

4. Define bearing capacity of soil and safe bearing capacity of soil. (5 marks)
5. What is roof ? Explain the constructional features of R.C.C. roofs. (5 marks)
6. Differentiate between plane surveying and geodetic surveying. (5 marks)

PART C

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

7. (a) State the rules that are followed to calculate the area. Explain anyone rule in detail. (10 marks)

Or

- (b) What are the different forms of building stones ? Also give the characteristics of a good building stone. (10 marks)

8. (a) Explain the differential leveling with a neat sketch. (10 marks)

Or

- (b) What are the different forms of steel sections used in structural works ? Also state their specific applications. (10 marks)

Turn over

Section II (Basics of Mechanical Engineering)

PART A

Answer all questions.

1. Mention the different types of ignition systems used in SI engine. (2 marks)
2. What are the different types of power plants ? (2 marks)
3. Define Refrigeration. (1 mark)

PART B

Answer any two questions.

4. Give the sketch of 4-stroke IC engine to show the various components of it and indicate the parts. (5 marks)
5. With the neat sketch explain the layout of a window room air conditioning. (5 marks)
6. Explain working principle of Gas turbine Power Plant with neat sketch. (5 marks)

PART C

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

7. (a) Explain the working principle of four-stroke petrol engine with neat sketches. (10 marks)

Or

- (b) Draw the layout of a vapour compression refrigeration system, and explain the working principle.

(10 marks)

8. (a) Draw the layout of the steam power plant and explain. (10 marks)

Or

- (b) Sketch and diesel power plant and explain its working principle, also state its merits and demerits.

(10 marks)