

C 40925

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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)