



COLLEGE: COLLEGE OF ENGINEERING, SCIENCE & TECHNOLOGY (CEST)

SCHOOL: SCHOOL OF ELECTRICAL & ELECTRONICS ENGINEERING

PROGRAMME: BACHELOR OF ELECTRICAL ENGINEERING (YEAR 3)

UNIT CODE: EEE 784

TITLE: POWER GENERATION

FINAL EXAMINATION – SEMESTER 1, 2014

ROOM: AS PER TIMETABLE

TIME: 3 HOURS & 10 MINUTES

INSTRUCTIONS TO STUDENTS

1. You are allowed **10 minutes** extra **reading time** during which you are **NOT** to write.
2. Begin each SECTION on a fresh page and use both sides of the sheet.
3. Write your candidate number at the top of each attached sheet.
4. Insert all written foolscaps, graph paper, drawing paper, etc. in their correct sequence and secure with a string.
5. For all sheets of paper on which rough/draft work has been done, cross it through and **ATTACH** these to your answer scripts.
6. Write clearly the number(s) of the question(s) attempted on the top of each sheet.
7. Use of programmable calculator(s) is prohibited.
- 8. ANSWER ALL SECTIONS.**
9. Show all working where necessary.
- 10. ALWAYS CHECK YOUR WORK BEFORE YOU LEAVE THE EXAM ROOM.**

SECTION A

(30 MARKS)

Note – Attempt any five questions. Each question is of 6.0 marks.

1. List various type of source of energy and power generation.
2. What is the concept of Power plant?
3. Define: load factor, utilisation factor, plant capacity factor, demand factor and diversity factor.
4. What are the principal factors involved in fixing of a tariff?
5. What is solar cell? Explain briefly with suitable diagram.
6. What is basic principle of wind power generation?

SECTION B

(30 MARKS)

Note – Attempt any four questions. Each question is of 7.5 marks.

1. Discuss the advantage and disadvantage of a diesel engine and the applications of a diesel power plant?
2. Name the major components and their functions of a wind turbine.
3. Discuss the various factors to be considered while selecting the site for nuclear power station. Discuss its advantages and disadvantages.
4. List & explain various electrical equipment used in a Substation
5. Explain the pumped storage types of hydroelectric power plants, its advantages and disadvantages.
6. Discuss the comparison between nuclear power plants and steam power plant.

SECTION C

(40 MARKS)

Note – Attempt any four questions. Each question is of 10 marks.

1. Explain the term depreciation and methods used to calculate the depreciation cost.
2. Draw the schematic arrangement of nuclear power plant and explain its stages, its advantages and disadvantages.
3. Draw the schematic diagram of a gas turbine plant and explain its major components.
4. What is meant by load curve? Explain its types and importance in power generation.
5. Differentiate dump power, firm power, prime power, hot reserve, cold reserve and spinning reserve.

[THE END]