Roll No. .

23764

M. Tech. 2nd Semester (Power System) Examination – May, 2024

MICRO GRID AND ENERGY STORAGE SYSTEM

Paper : 22MPS22C2

Time : Three hours] *[Maximum Marks : 100*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Question No. 1 is ***compulsory*** of short answer and attempt *four* questions by selecting *one* question from each Section. All question carry equal marks

1. (a) Define Micro grid concept. Explain its necessity.

(b) What do you mean by active and reactive power.

(c) Explain the role of energy storage systems.

(d) Differentiate battery and fuel cell.

(e) What do you mean by smart grid ?

SECTION – A

2. (a) State and explain the issues of interconnecting the micro grid with the utility grid.

(b) Compare Smart and Micro grid.

3. Explain Power electronics interfaces in DC and AC Micro grids in detail.

SECTION – B

4. (a) Explain the protection and control of micro grid.

(b) Explain the concept of islanded mode.

5. Explain different communication based techniques used in operation and control of Micro grid.

SECTION – C

6. Explain different energy storage technologies in detail.

7. (a) Explain the role of energy storage for power system.

(b) Describe efficiency of energy storage systems.

SECTION – D

8. (a) Explain Superconducting Magnetic Energy storage.

(b) Explain different charging methodologies.

9. Write Technical notes on following :

(a) Energy storage in Micro grid

(b) G2V

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70725

M. Sc. Environmental Science 2nd Semester (Open Elective Course) w.e.f. 2016-17 Under CBCS Scheme Examination – May, 2024

ENVIRONMENTAL ISSUES

Paper : 16ENV01

Time : Three Hours] *[Maximum Marks : 80*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting at least *one* question from each Unit. Question No. 1 is *compulsory*. All questions carry equal marks.

1. Write briefly on the following : $2 \times 8 = 16$

   (a) Name the various greenhouse gases.

   (b) Define total fertility rate.

   (c) Name the disease cause by nitrate.

   (d) Define social forestry.

P. T. O.

(e) Define siltation.

(f) Define air pollutants.

(g) Define Chemical Oxygen Demand (COD).

(h) Define soil erosion.

UNIT – I

2. Explain the characteristics of human population growth of world. 16

3. Write notes on the following :

(a) Impacts of ozone layer depletion 8

(b) Impacts of urbanization on environment 8

UNIT – II

4. Define forest. Explain the various causes of deforestation and various strategies for forest management in India. 16

5. Write notes on the following :

(a) Desertification 8

(b) Impact of mining on environment 8

UNIT – III

6. Define air pollution. Explain the various air pollutants in detail. 16

7. Write notes on the following :

(a) Solid waste management 8

(b) Impact of pesticides on environment 8

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22706

Foundation Elective 2nd Sem. (ECE)
(CBCS Scheme)
Examination – May, 2024

ELECTRONICS ENGINEERING

Paper : 16ECEF1

Time : Three Hours] *[Maximum Marks : 40*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting *one* question from each Unit. Question No. 1 is ***compulsory***. All questions carry equal marks.

$4 \times 2 = 8$

1. (a) What is Knee Voltage ?

(b) What is thermal run away position ?

(c) What is threshold voltage in MOSFET ?

(d) Give truth table for NOR Gate.

P. T. O.

UNIT – I

2. Discuss clipping and clamping circuits. 8

3. Discuss peak to peak detector and voltage multiplier circuits. 8

UNIT – II

4. Explain common emitter configuration of transistor with circuit diagram and VI characteristics. 8

5. Explain self bias circuit. 8

UNIT – III

6. Explain depletion type MOSFET with its circuit diagram, drain characteristics and transfer characteristics. 8

7. Write short notes on : 8

   (a) FET as a voltage variable resistor

   (b) JFET

UNIT – IV

8. What is a S-R flip-flop ? Explain its working with truth table. 8

9. Convert the following: $4 \times 2 = 8$

(a) $(1100.111)_2 = (\quad)_8$

(b) $(326)_8 = (\quad)_{10}$

(c) $(AB3)_{16} = (\quad)_2$

(d) $(14BD)_{16} = (\quad)_8$