Code No. 3044 / O

FACULTY OF ENGINEERING

B.E. 2/4 (Civil/ECE/AE/CSE) II-Semester (Old) Examination, Nov./ Dec. 2016

Subject: Environmental Studies

Time: 3 Hours **Max.Marks: 75**

Note: Answer all questions from Part A. Answer any five questions from Part B.

PART – A (25 Marks)

1	What are the methods to propagate public awareness about environmental protection?	2
2	Define Ecological Pyramids	2
3	Mention the threats to Biodiversity	2
4	Write about the issues involved in the enforcement of environmental legislations	2
5	What is photochemical smog?	2
6	Why do conflicts over water arise?	3
7	Describe the role of producers in an ecosystem	3
8	What is the importance of biodiversity?	3
9	Explain any one method of municipal solid waste disposal	3
10	What is watershed management? List out the objectives.	3

PART – B (5x10 = 50 Marks)

11	a)	Discuss the impacts of modern agriculture on the environment.	5
	b)	Explain the scope and importance of environmental studies.	5
12	a)	Define ecological succession and its types. What is the general process of succession in nature?	5
	b)	Give the classification of terrestrial ecosystems. Explain the structure and function of any one terrestrial ecosystem.	5
13	a)	What is biodiversity? Explain the hierarchical levels of biodiversity.	5
	b)	Explain the *ex-situ* method to conserve biodiversity.	5
14	a)	Giving the classification of air pollutants, briefly explain the methods to control gaseous pollutants.	5
	b)	What are the objectives and salient features of the Forest Conservation Act?	5
15	a)	Explain the various water conservation methods.	5
	b)	What is ozone depletion? Explain the role of ODS in the depletion of ozone layer. And list out the consequences.	5
16	a)	What are the merits and demerits of construction of big dams?	5
	b)	Explain the disaster management in India.	5
17		Write short notes on:	
	a)	Endangered and Endemic species of India	5
	b)	Non-conventional energy resources.	5

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Code No. 3084 / N

FACULTY OF ENGINEERING

B.E. 2/4 (Civil / ECE / AE / CSE) II – Semester (New) (Suppl.) Examination, November / December 2016

Subject: Environmental Studies

Time: 3 Hours **Max.Marks: 75**

Note: Answer all questions from Part A. Answer any five questions from Part B.

PART – A (25 Marks)

1	Discuss ecological impacts of dams	2
2	Define Food chains and Food webs. Discuss about the role of decomposers in an ecosystem.	3
3	What are the advantages of solar energy over other resources?	2
4	Define biodiversity and discuss Consumptive and ethical values of biodiversity	3
5	Write a brief note on soil erosion.	2
6	Discuss salient features of wild life protection act.	2
7	Define noise pollution. Name any two controlling aspects of noise pollution	3
8	Distinguish between primary and secondary pollutants.	2
9	Discuss the impacts of disasters on infrastructure and development	3
10	Write a brief note on ocean ecosystems	3

PART – B (50 marks)

11	a)	Define Environment and discuss the scope and importance of environmental studies.	5
	b)	Discuss various non renewable energy resources in detail.	5
12	a)	Define an ecosystem. Explain energy flow in an ecosystem with the help of a diagram.	5
	b)	Briefly discuss ecological pyramids.	5
13	a)	Define biodiversity and explain various hierarchical levels of biodiversity.	5
	b)	Explain various conservative strategies of biodiversity.	5
14	a)	Define Air pollution. Explain various approaches for controlling of air pollution with their merits and demerits.	5
	b)	Discuss the mechanism, causes and consequences of green house effect.	5
15	a)	What is an earthquake? Enumerate its effects and what measures should be taken to mitigate this disaster.	5
	b)	Discuss the disaster management institutional framework in India.	5
16		Write short notes following:	
	a)	Drought and Floods	5
	b)	Water shed management.	5
17	a)	Discuss disaster management cycle.	5
	b)	Explain Carbon cycle with the help of a diagram.	5

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Code No. 3052 / O

FACULTY OF ENGINEERING

B.E. 2/4 (EEE) II - Semester (Old) Examination, November / December 2016

Subject : Power System - I

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part-A and answer any five questions from Part-B.

PART – A (25 Marks)

1 What is the function of super heater. (3)

2 Explain skin effect. (2)

3 Why AC transmission system is used more when compared to DC transmission system ? (3)

4 Explain grading of Insulator. (2)

5 Define hydrograph . (2)

6 What do you mean by transposition of lines? (2)

7 List the various parts of cables . (3)

8 Define base load and peak load. (2)

9 What are the various methods of improving string efficiency? (3)

10 List advantages of improving the power factor and list the various methods to improve power factor. (3)

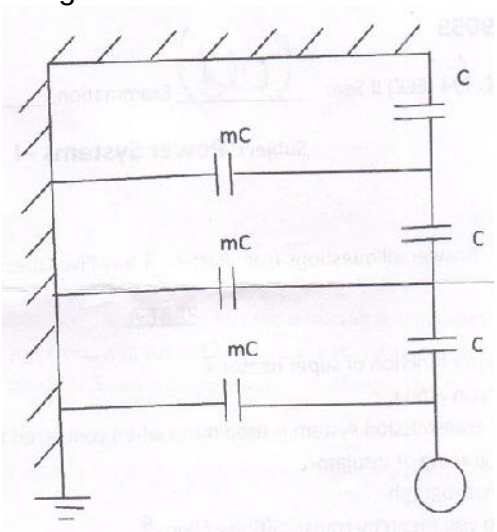
PART-B (50 Marks)

11 (a) What considerations have to be kept in view in siting nuclear plants. (5)
(b) How can solar energy be converted into electrical energy? Give a diagram showing the elements of such a plant. (5)

12 (a) Explain capacitance grading of a cable. (5)
(b) A transmission line conductor having a diameter of 19.5mm weighs 0.85kg/m. The span is 275m. The wind pressure is 39kg/m^2 of projected area with ice coating of 13mm. The ultimate strength of the conductor is 8000kg. Calculate the maximum sag if the factor of safety is 2 and ice weighs 910kg/m^3. (5)

13 Derive expression for three phase unsymmetrically spaced transmission line Inductance. (10)

14 (a) A three phase overhead transmission line is being supplied by three disc Insulators. The potential across top unit and middle unit are 9KV and 11KV respectively . Calculate the ratio of capacitance between pin and earth to the self capacitance of each unit and line voltage. (5)



(b) What are the methods of equalising the potential distribution over a string of insulators. (5)

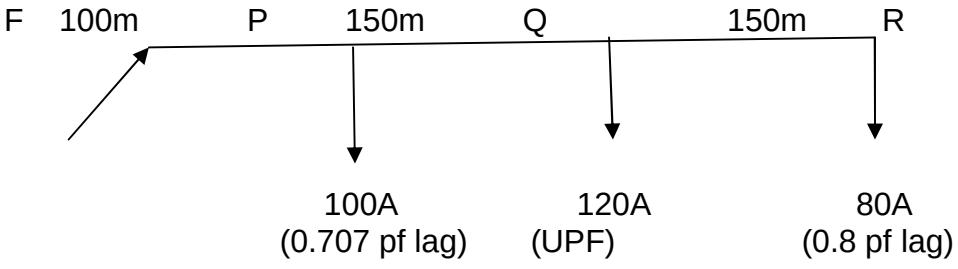
15 A generating station has a maximum demand of 5000KW, and the daily load on the station is as follows.

Load(MW)	1000	1750	4000	1500	3750	4250	5000	2500
Time	11Pm–6 Am	6 Am - 8 Am	8 Am – 12 Pm	12 Pm – 1 Pm	1 Pm -5 Pm	5 Pm - 7 Pm	7 Pm -9 Pm	9 Pm -11 Pm

(i) Draw the load curve and load duration curve .
(ii) Select the size and number of generating units.
(iii) What reserve plant would be necessary?
(iv) Load and plant capacity factor. (10)

16 (a) Give complete classification of hydro electric power plants. (5)
(b) List sequence of steps in coal handling. (5)

17 Determine the total voltage drop of a single phase distributor as shown in figure below. The impedance is (0.25+j0.125) Ω/ Km run (go and return). (10)



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Code No. 3089 / N

FACULTY OF ENGINEERING

B.E. 2/4 (EEE) II – Semester (New) (Suppl.) Examination, Nov. / Dec. 2016

Subject: Power System – I

Time: 3 Hours **Max.Marks: 75**

Note: Answer all questions from Part A. Answer any five questions from Part B.

PART – A (25 Marks)

1 What is the flow duration curve and what is its significance. 3
2 What are the advantages of combined cycle power stations? 2
3 Why it is necessary to develop non-conventional methods of generating electrical energy? 2
4 Brief about characteristics of wind power. 3
5 What is two part tariff? 3
6 What is meant by diversity factor? Brief its importance. 2
7 List out the advantages of suspension type insulators. 2
8 With a neat labelled diagram, show the various parts of a high voltage single core cable. 3
9 Distinguish between ac and dc resistance of a conductor. Why the two differ? 2
10 What is skin effect? On what factors does the skin effect depend? 3

PART – B (5x10 = 50 Marks)

11 a) Compare open cycle and closed cycle gas turbine plants. 4
b) The average monthly discharge (Q) measured at the site is given below: 6

Week	1	2	3	4	5	6	7	8	9	10	11	12
Q(m^3/sec)	1800	1900	1350	1200	1300	3000	4100	3500	1500	1300	1100	1000

Calculate the average discharge, plot the hydrograph and flow duration curve.

12 a) What are solar concentrators? Describe various components of a solar concentrator and discuss its advantages. 6
b) Explain with neat sketches, the principle of operation of a geothermal power plant with reference to indirect condensing cycle. 4

13 a) Explain the reasons why power factor tariff is imposed. Explain clearly the procedure for finding out the capacity of the shunt capacitor required for an existing installation for improvement of power factor. 5
b) Compare three wire distribution system with single phase system. 5

14 a) Derive the expression for sag of a line supported between two supports of the same height. 5
b) A 33 kV, three phase 50 Hz underground line, 3.5 km long, uses three single core cables. Each cable has a core diameter of 2.5 cm and the radial thickness of insulation is 0.6 cm. The relative permittivity of the dielectric is 3.1. Find the maximum stress and total charging KVAR. 5

15 Derive the expression for the capacitance of an unsymmetrical transposed three phase line. 10

16 a) Compare the salient features of various types of power plants. 5

b) Explain the term depreciation and discuss any one method of calculating the depreciation of an electrical power plant. 5

17 a) A string of 5 insulator units has mutual capacitance equal to 10 times the pin-to-earth capacitance. Find voltage distribution across various units as the per cent of total voltage across string and string efficiency. 5

b) Discuss about alpha decay, beta decay and gamma decay. 5

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