**Code No. 11047/BL**

# FACULTY OF ENGINEERING

**B.E. 2/4 (CIVIL/ECE/CSE/AE) II- Semester (Backlog) Examination, May/June 2019**

**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. State the benefits of biodiversity. (3)
2. Enumerate various methods of water conservation. (3)
3. What are producers and detritivores? (2)
4. Define wind energy and write its uses. (3)
5. Enumerate the reasons for soil degradation. (2)
6. Write about hazardous wastes. (2)
7. Write the basic principles of disaster management. (3)
8. List out the endangered species of India. (2)
9. What is Decertification? (3)
10. Discuss the causes of Acid rains. (2)

## PART – B (5 x 10 = 50 Marks)

11. a) Differentiate between renewable and non-renewable energy resources. (5)
    b) Explain the fertilizer-pesticide problems in modern agriculture.
12. a) Explain the concept of food chain and food web with the help of neat sketch. (5)
    b) Define ecological pyramid. Explain the different types of ecological pyramids. (5)
13. a) What are the hot spots of biodiversity Explain any two hotspot regions found in India.(5)
    b) Explain the classification of Bio-geographical zones of India. (5)
14. a) Explain the causes, effects and mitigation measures of air pollution. (5)
    b) Write the salient features of water prevention and control of pollution act 1974. (5)
15. a) Write the causes, effects and control measures of global warming. (5)
    b) Write short notes on
    (i) Population explosion (ii) Rainwater harvesting (5)
16. a) Write short notes on :
    (i) Non conventional energy resources (ii) Biofuels (5)
    b).With the help of a neat sketch discuss the transfer of energy in ecosystem. (5)
17. a) Explain in detail about nitrogen cycle.
    b) Classify solid waste. Write the adverse effects of solid waste. (5)

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**Code No : 11052/BL**

# FACULTY OF ENGINEERING

## BE 2/4(EEE) II – Semester (Backlog) Examination, May/June 2019

**Subject : Power Systems - I**

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

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

**PART – A (25 Marks)**

1) Define Diversity Factor and give its importance? 3 M
2) What is power factor Tariff ? 2M
3) What are the advantages & disadvantages of thermal power station? 3 M
4) What are the various parts of Hydro electric power plants ? 3 M
5) Explain the function of Nuclear Reactor? 2M
6) Explain the basic principles of Wind power generation? 2M
7) Why the voltage distribution across suspension insulator string is not uniform? 3 M
8) Explain the advantages of underground cables compared to over head lines? 2 M
9) Why it is preferable to use more than one conductor per phase rather than a solid or round conductor ? 3 M
10) What is meant by Transposition of line conductors? 2M

**PART – B (50 Marks)**

11. a) Derive the expression of most economical power Factor ? 5M
    b) Explain the depreciation by Diminishing value method. 5M

12. a) A 2-wire DC Ring distributor is 300m long and is fed at 240 V at point A. At point B, 150m from A, a load of 120 A is taken and at C, 100m in the opposite direction a load of 80 A is taken. If the resistance per 100m of single conductor is 0.03 ohms, Find:
    (i) Current in each section of distributor
    (ii) Voltage at points B and C 5M
    b) Explain the operation of Air pre heater & Economizer in Thermal Power Plant ? 5M

13. a) Draw the schematic diagram of Boiling Water Reactor(BWR) and explain the working of different components of it ? 7 M
    b) Compare conventional & non conventional energy sources? 3 M

14. a) Derive an expression for Sag of a line supported between two supports of unequal height . 5M
    b) Explain the improvement of string efficiency by using a Guard Ring ? 5M

15. a) Explain the significance of load curve & load duration curve . 5M
    b) Calculate the inductance of each conductor in a 3-phase, 3-wire system when the conductors are arranged in a horizontal plane with spacing such that $D_{31}$ =4 m; $D_{12} = D_{23}$ = 2 m. The conductors are transposed and have a diameter of 2.5 cm. 5M

16) Derive an expression for Capacitance of a three phase overhead transmission line when the conductors are un-symmetrically placed but transposed ? 10 M

17) Answer any two of the following: 10M
    a) Prime movers used in Hydro electric power plants
    b) Capacitance of three core cables
    c) Disadvantages of low Power Factor

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**Code No. 11058/BL**

# FACULTY OF ENGINEERING

**BE 2/4 (Inst.) II – Semester (Backlog) Examination, May / June 2019**

**Subject: Thermodynamics & Fluid Mechanics**

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

**Note: Answer all questions from Part-A, & any five questions from Part-B.**

## PART – A (25 Marks)

1. Explain the principles of increase in entropy in irreversible process.
2. Define first law of thermodynamics.
3. Write short notes on thermal efficiency of turbines.
4. Classify different gas turbines.
5. Define dynamic and kinematic viscosity.
6. Differentiate between steady and un-steady flow?
7. List out the devices used for measurement of discharge?
8. Explain co-efficient of discharge.
9. What do you understand by dynamic similarity?
10. What is Hagen Poiseuille equation?

## PART – B (5x10 = 50 Marks)

11 An air standard Diesel cycle has a compression ratio of 18 and the heat transferred to the working fluid per cycle is 2000 kJ/kg. At the beginning of the compression stroke, the pressure is 1 bar and the temperature is 300 K. Calculate the thermal efficiency.

12 Steam with absolute velocity of 320 m/s is supplied through a nozzle to a single stage impulse turbine, the nozzle angle is $22^{o}$. The mean diameter of blade rotor is 1.2 m and it has a speed of 2200 rpm. Find suitable blade angle for zero axial thrust. If the blade velocity co-efficient is 0.92 and steam entering flow rate is 12 kg/s. Calculate the power developed.

13 a) Determine the viscosity of a liquid having kinematic viscosity 6.5 stokes and specific gravity 1.95.
b) Classify fluid flows with a neat graph. Explain in detail.

14 a) Derive Bernoulli's equation of motion. State its assumptions
b) State impulse momentum equation with its applications.

15 a) Distinguish between Laminar and turbulent flows.
b) Derive expression of critical Reynolds number

16 a) Derive work done and efficiency of multi-stage compressors.
b) List out merits and demerits of an open cycle gas turbine from a closed cycle gas turbine?

17 a) Compare valve timing diagram of two stroke and four stroke cycle engines.
b) Explain with a neat sketch, the working of single stage impulse turbine.

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**Code No. 11066 / BL**

# FACULTY OF ENGINEERING

## B.E. 2/4 (M/P) II - Semester (Backlog) Examination, May / June 2019

**Subject : Thermo Dynamics**

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

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

### PART – A (25 Marks)

1 Explain different type of thermodynamic systems. (3)
2 Differentiate Perfect gas and Ideal gas. (2)
3 Compare Work transfer and heat transfer. (3)
4 Explain PMMI. (2)
5 Define a thermal reservoir, a heat engine and a heat pump? (3)
6 Define Gibb's function and mention applications. (2)
7 What is triple point? State the values of pressure and temperature at the triple point of water? (3)
8 What is clapeyron equation? Mention its applications. (3)
9 Represent Rankine cycle on T – S diagram. (2)
10 Define mass fraction and mole fraction. (2)

### PART – B (50 Marks)

11 (a) State Zeroth Law of thermodynamics and explain how it forms the temperature measurement. (4)
(b) Define a new temperature scale, say $^0$M, At ice and steam point the temperature are 80$^o$M and 300$^o$M respectively. Correlate this with the centrigrade scale the $^o$N reading on the scale is a certain number of degrees on a corresponding absolute temperature scale. Find this absolute temperature at $^o$N. (6)

12 (a) Show that the energy is a property of a system. (4)
(b) A gas undergoes through a thermodynamic cycle consists of three processes beginning at initial state where $P_1$ = 1 bar, $V_1$ = 1.5 $m^3$ and $V_1$ = 512 kJ, The three processes are follows.
(i) Process – 2 : Compression with PV=C to $P_2$ = 2 bar $U_2$ = 690 kJ
(ii) Process 2 – 3 : $W_{23}$ = 0, $Q_{23}$ = -150 Kj (iii) Process 3 -1 : $W_{31}$=15 kJ
Neglecting KE and PE changes determine the heat interaction $Q_{12}$ and $Q_{13}$ ? (6)

13 (a) Derive generalized steady flow energy equation. (5)
(b) State the Kelvin – Planck and clausius statements of the second law of thermodynamic and establish the equivalence between them. (5)

14 (a) A heat engine receives 1000 kW of heat at constant temperature of 285$^o$C. The heat is rejected at 5$^o$C. Specify which of the following heat rejections represent a reversible, irreversible or impossible process
(i) 840 kW (ii) 492 kW (iii) 300 kW. Comment on the result. (5)
(b) 0.2kg of air initially at 575 K temperature receives 300 kJ heat reversibility at constant pressure. Determine the available and unavailable energies of heat addition. Take Cp of air = 1.005 kJ/kg K and the temperature of the surroundings s = 300 K. (5)

15 (a) Explain the process of steam generation at constant pressure show the various stages on T-s diagram. (4)

(b) A vessel of volume 0.05$m^3$ contains a mixture of saturated water and saturated steam at temperature of 250$^oC$. The mass of liquid present is 10 kg. Calculate the pressure, the mass, the specific volume, the enthalpy and the entropy of steam. (6)

16 (a) Derive First and Third Maxwell equation. (5)

(b) Determine the gas constant, density and partial pressure of the components of a gas mixture consisting of air and lighting gas. The mass fraction of air and lighting gases are 10 and 1 respectively. Take the density of lighting gas as 0.5 kg/$m^3$ at 1.01325 bar and pressure and 273 K temperature. (5)

17 Derive an expression for the air standard efficiency of Diesel cycle. (10)

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**Code No. 11078/BL**

# FACULTY OF ENGINEERING

## B.E. 2/4 (IT) II – Semester (Backlog) Examination, May/June 2019

## Subject: Web Technologies

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

**Note: Answer all questions from Part – A, & Any five questions from Part – B.**

### PART – A (25 Marks)

| | | |
|---|---|---|
| 1 | Differentiate HTTP-GET and POST requests. | 2 |
| 2 | Define URL, URN and URI. | 3 |
| 3 | Write the syntactic differences between HTML and XHTML. | 3 |
| 4 | Compare and contrast HTML and XML. | 3 |
| 5 | What is XML Processor? | 2 |
| 6 | List the different list tags in HTML. | 2 |
| 7 | Define JSP directives with example. | 2 |
| 8 | Explain the structure of WSDL document. | 3 |
| 9 | Explain exception handling in JSP. | 3 |
| 10 | What is AJAX? | 2 |

### PART – B (50 Marks)

11 Create a XHTML registration form to accept the details of a student : Name, Address (Street Name, Country and Pin code), Sex (Male/Female), Branch (chosen from a list box) and Courses (Check box). Provide submit and reset buttons on it. 10

12 a) Write a DTD for the XML document which has the student details with the following fields – roll number, name, course, address. Assume values for each field. 7

b) Write a CSS file for the above XML document. 3

13. a) List the differences between Servlet and JSP. 4

b) Write a JSP program to find the factorial of a number. 6

14. a) Explain the differences between SOAP and REST. 5

b) Explain UDDI Data structures. 5

15. a) What are the features of ASP.Net? Explain different controls in ASP.Net with examples? 6

b) Explain Required Field Validator and Range Validator control used in ASP.NET 4

16. a) List the types of session tracking? Explain cookies-session tracking in java servlets. 7

b) Mention the scripting elements of Java Server Pages 3

17. Write short notes on

a) Servlet Life cycle 5

b) XML Parsers 5

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**Code No. 11376/BL**

# FACULTY OF ENGINEERING

## B.E (All Branches) I-Semester (Backlog) Examination, May/June 2019

## Subject : Engineering English

**Time : 3 Hours** **Max Marks : 70**

**Note:** (i) Answer all questions in Part – A and any five questions from Part – B
(ii) Answers to the questions of Part – A must be at one place and in the same order as they occur in the question paper.
(iii) Missing data, if any, may suitably be assumed.

### Part – A (20 MARKS)

**I. State Whether the following statements are true or false. (2)**

i). Animal communication has the potential or innovation and creativity.
ii) Decoding is one of the processes of communication
iii) Identifying the purpose and main ideas behind the speech helps in effective listening.
iv) 'Reading a book' is an example of two-way communication.

**II. State whether the following sentences are formal or informal. (2)**

i). The girl whom I met in Science exhibition yesterday was interested in pursuing MS in the US.
ii) The girl I met in Science exhibition yesterday was interested in pursuing MS in the US.
iii) We went to Rajasthan for the vacation. We have a lot of things to tell you.
iv) Went to Rajasthan for the vacation. Lots to tell you.

**III. Write sentences of your own by using the clues given below. (2)**

i) Write, book (past tense)
ii) Watching television (Past continuous)
iii) Friend left (past perfect)
iv) (Hands, dirty, gardening (past perfect continuous)

**IV Fill in the blanks with appropriate question tags. (2)**

i) I am your classmate, _____?
ii) Sanjay and Bharat are workaholics, _____?
iii) Make some coffee, _____?
iv) This is a new phone, _____?

**V Make a précis of the following passage in about 20 words and also suggest a suitable title. (2)**

The kind of language you use is dependent on the context of communication. When you speak to an elderly person such as your father, teacher or employer, you use one kind of language which shows respect; it also shows your personal, social or cultural distance from them. Such a variety is an example of formal communication. (56 words)

**VI Expand the following proverb. (2)**

A rolling stone gathers no moss.

**VII Give meanings of the following technical vocabulary. (2)**

i) Prototype
ii) Metadata
iii) Amplify
iv) Watershed

…2

**VIII Write one-word substitutes for the following (2)**

i) A mixture of loud unpleasant sounds
ii) A violent involuntary muscular contraction.
iii) Longing for the past
iv) Agreed on or shared by everyone in a group

**IX Complete the following with the correct degree of adjectives given in brackets (2)**

i) The biology paper was _____ (hard) than the Chemistry paper.
ii) I have always found Hyderabad to be _____ (relaxing) city in the world.
iii) This has been the _____ (hot) summer in the last ten years.
iv) The _____(quiet) place on campus is the library.

**X Write the difference in meaning of the following pairs of words. (2)**

i) Personal, personnel
ii) Enquiry, inquiry
iii) Lose, loose
iv) Canvas, canvass

**PART – B (10 x 5 = 50 marks)**

1. Discuss different types of listening and mention a few tips to improve one's listening Skills.
2 Describe different features of human communication.
3 Punctuate the following:
Varun is one of the most laid-back people I know he is tall and slim with black hair and he always wears a t-shirt and black jeans his jeans have holes in them and his sports boots are scruffy too he usually sits at the back of the class and he often seems to be asleep however when the exam results are given out he always gets an A I don't think hes as lazy as he appears to be.
4 Write a report on the hygienic conditions of government hospitals in Hyderabad.
5 List out ten affixes with two examples each.
6 How could Sachin Tendlkar become legendary cricketer? Explain.
7 'Azim Premji filled the vacuum in the IT industry in India'. Comment.

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