ADIKAVI NANNAYA UNIVERSITY:: RAJAMAHENDRAVARAM

I BTech (Common to CSE,IT,ECE & EIE wef 2017-18) **I Semester**

ECEEIE101 ENGLISH-1 (MODEL QUESTION PAPER)

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

SECTION– A

Answer ALL questions **4x15=60M**

1. a) Fill in the blanks with appropriate tense form 5M

1. Both of Ravi's children_____(jog) every morning.
2. We_____(make) tea while Shanta is_____(clean) the house.
3. She_____(grow)very tired after she had walked five miles.
4. We_____ (meet) him at the theatre at 8PM tonight.
5. You_____ (find) mobile phone in my house I think I left it three.

b) Rewrite the following sentences in Passive Voice 5M

1. My sister broke my parents' favourite lamp.
2. The veteran pitcher threw a ball travelling at incredible speed.
3. Some of the performances amazed us.
4. They gave up the search after three hours.
5. The impatient server cleared the dishes from the table.

c) Change the following sentences from Direct to Indirect Speech 5M

1. "Do you like fish , Mary?" she asked.
2. The boy said," I couldn't come because of my father's illness."
3. "I am leaving" the sailor said
4. "What are you going to do tomorrow?" she asked me.
5. She said to me, "Don't worry about it."

2. a) Match the following words with appropriate synonyms 5M

a) Quaint--- 1)travel
b) Crazy— 2) strange
c) Traverse— 3) mad
d) Discovered--4)favorable
e) Congenial-- 5)found

b) Choose the appropriate one word substitute to the following phrases from the words given below 5M

Incorrigible potable eradicate connoisseur illicit

1. A critical judge of any art and craft
2. To get rid of something bad completely_____
3. Impossible to change or improve
4. Not legal or not approved of by society
5. Clean and safe to drink

c) Use the following Idioms in your own sentences. 5M

1. To make ends meet
2. To burn the candle at both ends
3. Gift of the gab
4. Once in a blue moon
5. Bone of contention

3. a) How can the statement" A diseased mind is even more harmful than the disease itself" be explained 15M

(Or)

b) Explain the central theme of the poem "Ozymandias".

4. a) Expand any one of the ideas 5M

1. Make hay while the sun shines
2. A stitch in time saves nine
3. Penny wise and pound foolish

b) Write an essay on any one of the following 10M

1. Population Explosion
2. Role of technology in human life
3. Students' role in empowering nation

SECTION - B

5 a) Rewrite the following sentences as directed 5M

1. He confessed his crime (Simple to Complex)
2. When he was a child, Lincoln did not go to school.(Complex to Simple)
3. The boy was diligent, **so** the teacher praised him. (Compound to Simple)
4. In spite of his popularity**,** he cannot be considered as a great writer. (Simple to Compound)
5. Buy two shirts and get one free. (Compound to Complex)

b) Write a paragraph on any one of the following 5M

1. My first day at the University
2. What I know about Ocean
3. My favorite book
4. Games people play

c) Rewrite the following sentences using question tags 5M

1. It is not dark.
2. Pavan has not kept his word.
3. They were going to the lake
4. You are trying to find someone.
5. The bread will become soggy.

ADIKAVI NANNAYA UNIVERSITY:: RAJAMAHENDRAVARAM

I BTech (Common to CSE,IT,ECE & EIE wef 2017-18) **I Semester**

ECEEIE102 MATHEMATICS-1 (MODEL QUESTION PAPER)

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

SECTION– A

Answer ALL questions **4x15=60M**

1 a) Show that the functions $u = xy + yz + zx$, $v = x^2 + y^2 + z^2$ and $w = x + y + z$ are functionally related. Find the relation between them. (7M)

b) If z is a homogeneous function of degree n in x and, show that

$$x^2 \frac{\partial^2 z}{\partial x^2} + 2xy \frac{\partial^2 z}{\partial x \partial y} + y^2 \frac{\partial^2 z}{\partial x^2} = n(n-1)$$ (8M)

(OR)

c) If $u = f(r)$ and $x = rcos\theta$, $y = rsin\theta$, prove that $\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = f''(r) + \frac{1}{r} f'(r)$ (7M)

d) Find the equations of the tangent plane and the normal to the surface $z^2 = u(1 + x^2 + y^2)$at (2,2,6). (8M)

2 a) Expand the function $f(x, y) = e^x \log(1 + y)$in terms of x and y upto the terms of 3rd degreeusing Taylor's theorem (7M)

b) Find the volume of the greatest rectangular parallelepiped that can be inscribed in the ellipsoid $\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1$ (8M)

(OR)

c) A rectangular box open at the top is to have volume of 32 cubic ft. Find the dimensions of the box requiring least material for its construction. (7M)

d) By Successive differentiation if $\int_0^1 x^m \, dx = \frac{1}{m+1}$ w.r.t 'm' evaluate $\int_0^1 x^m (\log x)^n \, dx$ (8M)

3 a) Solve$y(x^2y^2 + 2)dx + x\,(2 - 2x^2y^2)dy = 0$ (7M)

b) Solve $(1 + y^2) + \left(x - e^{\tan^{-1} y}\right)\frac{dy}{dx} = 0$(8M)

(OR)

c) Solve $(x + 1)\frac{dy}{dx} - xy = e^x(x + 1)^{n+1}$(7M)

d) Solve $(xy^3 + y)dx + 2(x^2y^2 + x + y^4)dy = 0$. (8M)

4 a) If the temperature of a body is changing from 100^0c to 70^0 c in 15 mts, find when the temperature will be 40^0 c , if the temp of the air is 30^0 c. (7M)

b) Solve $(D^2 - 5D + 6)y = e^x \, sinx$ (8M)

(OR)

c) The number N of bacteria in a culture grew at a rate proportional to N. The value of N was initially 100 and increased to 332 in one hour. What would be the value of N after $1\frac{1}{2}$hour? (7M)

d) Solve $(D^2 + a^2)y = tanax$, by the method of variation of parameters. (8M)

SECTION– B

Answer any FIVE questions **5x3=15M**

a. Find the first and second partial derivatives of $z = x^3 + y^3 - 3axy$

b. If $u = x \log(xy)$ where $x^3 + y^3 + 3xy = 1$, find $\frac{du}{dx}$

c. The period of a simple pendulum is $= 2\pi\sqrt{\frac{l}{g}}$, find the maximum error in T due to the possible error upto 1% in l and 2.5% in g.

d. If $u = x^2 - y^2, v = 2xy$ and $x = rcos\theta, y = rsin\theta$ find $\frac{\partial(u,v)}{\partial(r,\theta)}$

e. Solve $(2x - y + 1)dx + (2y - x - 1)dy = 0$

f. Solve $xdy + ydx + \frac{xdy - ydx}{x^2 + y^2} = 0$

g. Find the particular value of $\frac{1}{(D-2)(D-3)}e^{2x}$

h. Solve $(D^2 + D + 1)y = 0$

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I BTech (Common to CSE,IT,ECE & EIE wef 2017-18) **I Semester**

ECEEIE103 COMPUTER PROGRAMMING AND NUMERICAL METHODS

(MODEL QUESTION PAPER)

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

SECTION– A

Answer ALL questions **4x15=60M**

1 a) Explain the basic structure of C program. [5M]

b) Explain formatted input and output Statements with an example. [10M]

(OR)

c) Explain about Control Statements and implement a program to find given number is palindrome or not? [7M]

d) Define Two Dimensional Array? How to initialize two dimensional array andwrite a C Program to find multiplication of two matrices. [8M]

2 a) Define a function and explain different categories of functionswith an example. [7M]

b) Explain about Parameter Passing techniques and implement a program to find swapping of two numbers by using call by reference method. [8M]

(OR)

c) Define a Pointer & write a C program to compute sum of all elements in array [7M]

d) Explain the concept of pointers as function arguments with an Example. [8M]

3 a) Define a Structure and write a C program to display the student detailsby using arrays of structures. [7M]

b) Write a C program to display the employee details by using structure with in a structure. [8M]

(OR)

c) What is file? How to create a file? Describe the different file operations. [8M]

d) Write a programme to copy one file to another file. [7M]

4 a) Find the root of the following equation using Newton Raphson method, correct the result upto 3 decimal places x^3-3x-5=0.[7M]

b) Evaluate using Simpson's Rule $\int_{-2}^{2} x \sin(x)\, dx$ [8M]

(OR)

c) Explain Simpson's $1/3$rd rule for numerical integration [8M]

d) Explain Trapezoidal rule for numerical integration. [7M]

SECTION– B

Answer any FIVE questions **5x3=15M**

a. Explain operators in C
b. Explain any three string handling functions in C
c. Explain recursive function with an example.
d. Explain the concept of chain of pointers with an example.
e. What are the differences between structures and unions in C
f. Explain command line arguments in C
g. Explain about Eular's Method.
h. Explain about R-K Method.

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I BTech (Common to ECE & EIE wef 2017-18 **) I Semester**

ECEEIE104 CHEMISTRY (MODEL QUESTION PAPER)

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

SECTION – A

Answer ALL questions **4x15=60M**

1. a) Write about the following with suitable examples [7 + 8]
   (i) Addition Polymerization (ii) Condensation Polymerization
   (OR)
   b) Write about the following [7 + 8]
   (i) Thermosetting (ii) Thermoplastics

2. a) What is corrosion? Explain the various factors effecting on corrosion.
   (OR)
   b) Write an essay on corrosion controlling methods

3 a) Write about the following [7 + 8]
   (i) Hardness of water (ii) Reverse Osmosis Method.
   (OR)
   b) Write about the engineering applications of ceramics and refractories.

4 a) Explain the Otto Hoffmann's process for the manufacturing of coke
   (OR)
   b) Write the classification of lubricants and engineering applications of lubricants

SECTION – B

Answer any FIVE questions **5x3=15M**

5.

a. Write about Ionic Polymerization.
b. Write about conducting polymers
c. Write about special paints
d. Write about metallic coating
e. Write the chemical composition of cement
f. Write about cement concrete and R.C.C
g. Write about ranking of coal
h. Explain about Bio gas, LPG and CNG

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I BTech (Common to ECE & EIE wef 2017-18 **) I Semester**

ECEEIE105 BASICS OF ELECTRONICS (MODEL QUESTION PAPER)

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

SECTION – A

Answer ALL questions **4x15=60M**

1 a) Explain the carrier concentration in intrinsic semiconductor [15M]

(OR)

b) Derive an Expression for Electron emission from metal [10M]

c) Differentiate between metals, insulators and semiconductors using energy band diagrams [5M]

2 a) Explain the tunnelling phenomenon. Explain the characteristics of Tunnel diode with the help of necessary energy band diagrams [10M]

b) Explain Schottky diode with necessary sketches? [5M]

(OR)

c) Draw the circuit of a Half wave rectifier and find out the Ripple factor, % regulation and Efficiency. [10M]

d) Explain the relative merits and demerits of all rectifiers? [5M]

3 a) With a neat diagram explain the various current components in an NPN Bipolar Junction Transistor and hence derive general equation for collector current, Ic [8M]

b) Sketch the h-model of CE Configuration? [7M]

(OR)

c) Define Biasing? Draw the fixed bias circuit and obtain the expression for the Stability factor [8M]

d) Design a self-bias circuit using silicon transistor to achieve a stability factor of 10, with the following specifications: V_{cc} = 16V, V_{BE} = 0.7v, V_{CEQ} = 8v, I_{CO} = 4mA and β = 50? [7M]

4 a) Explain transistor RC coupled amplifier eith reference to frequency response and mention its advantages, disadvantages and applications [15M]

(OR)

b) Sketch the Drain Characteristics of a MOSFET for different values of V_{GS} and mark different regions of operations

SECTION – B

Answer any FIVE questions **5x3=15M**

5.

a. Define Electronics
b. Explain about Extrinsic Semiconductor
c. Define Depletion Region
d. Explain about Zenor Regulator
e. When does transistor acts as a Switch?
f. Define three Stability factors
g. Explain about ohmic and saturation regions
h. Why FET is also called a Voltage operated device?

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I BTech (Common to ECE & EIE wef 2017-18 **) I Semester**

ECEEIE106 ENVIRONMENTAL SCIENCES

(MODEL QUESTION PAPER)

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

SECTION – A

Answer ALL questions **4x15=60M**

1 a) What is Environmental Science? Define its Scope and Importance

(OR)

b) Define Ecosystem. Explain

2 a) Discuss in detail about the water resource of earth. Add a note on the conflicts of Water usage

(OR)

b) Explain in detail about the forest resources and their exploitation

3 a) What is Biodiversity? Explain about the services the biodiversity offers to mankind

(OR)

b) Why should conversation of biodiversity be done. What are the different conversation methods of biodiversity?

4 a) Discuss in detail about the issues involved in environmental ethics. Add a note on their solutions

(OR)

b) What is EIA? Explain

SECTION – B

Answer any FIVE questions **5x3=15M**

5.

a. Rio Summit
b. Ecological succession
c. Mineral Resources
d. Waste land reclamation
e. Value of Biodiversity
f. Hotpots of Biodiversity
g. Water conversation
h. Ecotourism