DADI INSTITUTE OF ENGINEERING & TECHNOLOGY

(Approved by A.I.C.T.E., New Delhi & Affiliated to JNTU, Kakinada)

I B.Tech Question Bank

Subject : Applied Chemistry **Branch & Semister:ECE & I/II**

Faculty: D.SWAPNA

Department: Humanities &Basic Sciences **Designation: Asst proffesor**

UNIT-1

1. (a) Write the Suspension and Emulsion polymerisation? 6M
   (b) Explain the stereo specific polymers? 4M
2. (a)Write the differences between thermo plastics and thermosetting plastics. 4M
   (b)Explain the fabrication methods of Plastics? 6M
3. Write the preparation, properties and applications of the following plastics 10M
   i) Polyethene ii) Bakelite iii) Teflon and iv) BUNA-S
4. Explain the (a) Biodegradable polymers? 5M
   (b) Fibre Reinforced plastics?5M
5. Explain the machanism of (i) Addition polymerisation? 7M
   (ii) Condensation polymeritation? 3M

UNIT – II

1. (a)Define the CalorificValue, LCV and HCV of a fuel? 4M
   (b) Describe how the Calorific value of a solid fuel is determined using a bomb calorimeter?6M
2. Explain the a) Proximate analysis of coal ? 5M
   b) Ultimate analysis of coal? 5M
3. (a)Write a note on (a) Octane Number and Cetane Number? 4M
   (b) Find HCV and LCV of a coal sample containing: 75% C; 10% H_2; 8% O_2; 5% N_2 and 2%S and remaining is ash. Assume latent heat of steam.6M
4. Define the (a)Petrol Knocking and Diesel Knockig ?4M
   (b)Refining of petroleum.6M
5. (a)Write a brief note on Explosives?4M
   (b)Explain the Natural gas, LPG and CNG? 6M

UNIT- III

1. Explain the (a) Standard hydrogen electrode and Calomel electrode.7M
   (b)Electrochemical series?3M
2. Define the (a) Single electrode potential and give its significance?3M
   (b) Lithium cells? 7M
3. (a)Explain the galvanic cell? 5M
   (b)Define corrosion? Write the factors effecting the corrosion? 5M
4. Discuss the mechanism of corrosion?10M
5. Explain the (a) Cathodic protection?6M
   (b) Galvanization and Tinning? 4M

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UNIT-IV

1. Explain the (a) SEM and TEM for the preparation of Nano materials? 7M
   (b) Applications of Nanomaterials3M
2. Write a detailed account on the (a) Types of superconductors.6M
   (b) Engineering application of superconductors.4M
3. Write a detailed account on the (a)Preparations, and properties of carbon nano tubes.6M
   (b)Engineering application of carbon nano tubes4M
4. (a)What is the green Chemistry? Write the principles of green chemistry?6M
   (b) Write any two methods of synthesis of compounds by using green chemistry?4M
5. Write the (a) Sol-gel method for the preparation of Nano materials?5M
   (b) R_4M_4 principles in greeen chemistry?5M

UNIT-V

1. (a) Define the term semiconductor, give examples. And explain the conduction process in semi Conductors. 5M
   (b) What are stoichiometric and non- stoichiometric semiconductors?5M
2. (a) Explain Controlled valency semiconductors.6M
   (b) Explain the phenomenon of Doping. 4M
3. Name the four types of crystalline solids.5M
   (b)What is BCC and FCC packing of metals? Give examples for BCC and FCC metals.5M
4. (a) Explain magnetism and what are the magnetic materials? 4M
   (b) Discuss briefly regarding the Ferro and Ferri magnetic materials?6M
5. (a) Discuss about the (a) Hall Effect and its applications? 6M
   (b) Engineering applications of insulators? 4M

UNIT-VI

1. Discuss about (a) Photovoltaic cells. 7M
   (b) Solar Cells. 3M
2. Discuss briefly about the hydro power and its sources, applications?10M
3. Write note on geothermal energy and its applications? 10M
4. Write about (a) the types of cycles in OTEC plant?
   (b) the process of OTEC by a schematic diagram?10M
5. Write a brief note on bio mass and its conversion into useful energy. 10M

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Course : B.Tech. **Branch :** CSE- B **Year/Semester :** I/II **Academic Year :** 2017-18

Faculty Name : Mrs. G. Mutyalamma **Subject** : Data Structures **Admitted Batch :** 2017

QUESTION BANK

UNIT-I: ARRAYS

1. A) Define data structure. Discuss different types of data structure their Implementations applications. [5 M]
   B) What is an array? Discuss different types of array with examples. [5 M]
2. A) Explain how to implement polynomial ADT using array. Discuss its Advantages And Disadvantages. [5 M]
   B) Explain polynomial addition using arrays [5 M]
3. A) Explain sparse matrix representation using array with an example. Discuss the Advantage and disadvantages of this method. [5 M]
   B) Discuss matrix multiplication with an example [5 M]
4. A) Explain in detail about transpose of matrix with example? [5 M]
   B) illustrate about polynomial representation along with ADT? [5 M]

UNIT-II: STACKS AND QUEUES

1. A) Write an algorithm to insert and delete a key from circular queue. [5 M]
   B) Explain the procedure to convert infix expression to postfix expression with the Following expression: ((A –(B+C) * D) / (E+F)) [5 M]
2. A) Explain the evaluation of prefix expression. Find the equivalent prefix of :8 6 3 + * 1 2 3 -/- [5 M]
   B) Explain basic operations of queue. List the steps to implement queue using stack. [5 M]
3. A) Explain the operations performed on simple queue with an example. [5 M]
   B) Convert following expression X+(Y * Z) – ((N * M +O) /P) in to post form. [5 M]
4. A) Write an algorithm for basic operations of stack. [5 M]
   B) Explain the procedure to evaluate postfix expression. Evaluate the following Postfix expression 7 3 4 + - 2 4 5 / + * 6 / 7 +? [5 M]

UNIT-III: LINKED LISTS

1. A) Write recursive algorithm for lists. [5 M]
   B) Explain the procedure to insert and delete element from sparse matrix. [5 M]
2. A) Write an algorithm to push and pop an element from linked stack. [5 M]
   B) Discuss sparse matrix representation using linked list. [5 M]
3. A) Write an algorithm to delete an element anywhere from doubly linked list. [5 M]
   B) Write applications of single linked list to represent polynomial expressions [5 M]
4. A) List various operations of linked list and explain how to insert a node anywhere in The list. [5 M]
   B) Show how to reverse a single linked list. [5 M]

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UNIT-IV: TREES

1. A) Explain binary tree ADT. [4 M]
   B) Discuss representation of binary tree using arrays and linked list. [6 M]
2. A) What operations can be performed on binary trees? Discuss. [4 M]
   B) Write in-order, pre-order and post-order traversal of a binary tree. [6 M]
3. A) Construct max heap for the following: [5 M]
   140, 80 , 30 , 20 ,10 ,40 ,30 ,60 ,100 ,70 ,160 ,50 , 130, 110, 120
   B) Explain in-order traversal of threaded binary tree with an example. [5 M]
4. A) Define binary search tree. Show how to insert and delete an element from binary Search tree with an example? [6 M]
   B) Write algorithm to insert and delete an element from binary search tree. [4 M]

UNIT-V: GRAPHS

1. A) What is a graph? Explain the properties of graphs. [4 M]
   B) Write breadth first traversal algorithm. Explain with an example [6 M]
2. A) What are connected components of graph? Is there a method to find out all the Connected components of graph? Explain. [4 M]
   B) Explain Prim's algorithm with an example. [6 M]
3. A) Discuss kruskal's algorithm with an example. [6 M]
   B) Explain how to represent a graphs. [4 M]
4. A) Explain Warshall's algorithm to find transitive closure of a graph with a suitable Example. [5 M]
   B) Explain All pairs shortest path with example? [5 M]

UNIT-VI: SORTING

1. A) Write algorithm for merge sort. [5 M]
   B) Discuss how to sort elements using merge sort with suitable example. [5 M]
2. A) Rearrange following numbers using quick sort: [5 M]
   10, 6, 3, 7, 17, 26, 56, 32, 72
   B) Write a program to sort the elements using radix sort. [5 M]
3. A) State and explain insertion sort with example. [5 M]
   B) Differentiate between iterative merge sort and recursive merge sort [5 M]
4. A) State and explain heap sort with example. [6 M]
   B) Evaluate time complexity and space complexity of an algorithm. [4 M]

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DEPARTMENT OF ELECTRONICS & COMMUNICATIONS ENGINEERING

QUESTION BANK (2017-18)

NAME OF SUBJECT : Electrical & Mechanical Technology (mid-1)

Name of the faculty : C.Madhuri, EEE

REGULATION : R16

COURSE : B.TECH

BRANCH : ECE

YEAR / SEMESTER : I/ II

UNIT-1 DC MACHINES

1.a) Explain constructional features and working principle and applications of a DC generator.

b) Draw and explain magnetization characteristics of DC shunt and compound Generators.

2.a) Explain the emf equation of DC generator

b) A 4-pole, lap-wound, DC shunt generator has a useful flux per pole of 0.07 Wb. The armature winding consists of 220 turns each of 0.004 resistance. Calculate the terminal voltage when running at 900 r.p.m. if the armature current is 50 A.

3.A) b) How the DC generators are classified. Explain with neat circuit diagrams

B) A 4-pole, long-shunt lap-wound generator supplies 25 kW at a terminal voltage of 500 V. The armature resistance is 0.03 ohm, series field resistance is 0.04 ohm and shunt field resistance is 200 ohm. The brush drop may be taken as 1.0 V. Determine the e.m.f. generated. Also calculate number of conductors if the speed is 1200 rpm and flux per pole is 0.02 Wb. Neglect armature reaction.

4.a) Explain the operation of three point starter and applications of DC motors.

B) Explain different speed control methods of DC motor. Which is the more popular method? Torque equation of dc motor?

5.a) What is a transformer? How does a transformer transfer electrical energy from one circuit to another? Derive its emf equation?

b) Derive the expression for induced e.m.f in a transformer in terms of frequency, maximum value of flux and number of turns on the windings . (c)In a 20 kVA, 2000/200 V, single-phase transformer, the iron and full-load copper losses are 350 and 400 W respectively. Calculate the efficiency at unity power factor on (i) full load (ii) half full-load.

6a) Define regulation and efficiency of a transformer

b) Derive the condition for maximum efficiency in a transformer

7. a) What are various losses in a transformer? Explain each one in detail.

b.) An 8 pole D.C shunt generator with 778 wave-connected armature conductors and running at 600 r.p.m supplies a load of 15 ohms resistance and at terminal voltage of 70 V. The armature resistance is 0.3 ohms and the field resistance is 260 ohms. Find the armature current the induced e.m.f and the flux per pole.

UNIT-2 AC ROTATING MACHINES

1.a)Explain the construction & principle of operation of alternator

b) What is slip and write its expression. How does the slip vary with load?

2. a) Obtain the condition for maximum torque under running condition in Induction motor.

b) construction $principle of operation of 3-phase squirrel cage induction motor.

3a) Draw equivalent circuit of 3-phase induction motor on load. What is the effect of increasing air-gap length in an induction motor?

b) Define the efficiency and applications of three-phase induction motror?

4. a) Draw and explain the slip-torque characteristics of a 3-phase induction motor. How is speed of a DC motor reversed?

b) Write the expressions for starting and running torque of an induction motor.

5. a) Explain the various schemes of starting squirrel cage induction motor.

b) If the e.m.f. in the stator of an 8-pole induction motor has a frequency of 50 Hz and that in the rotor 1.5 Hz, at what speed is the motor running and what is the slip?

c) A 12 pole, 3-phase alternator is coupled to an engine running at 500 rpm. It supplies an induction motor which has a full load speed of 1 440 rpm. Find the percentage slip and the no. of poles of the motor.

6) Explain regulation of alternator by synchronous impedance method

UNIT-3 MEASURING INSTRUMEN TS

1 a). Explain how deflection torque is produced

1b) What is controlling torque and explain its significance

2a) Explain how damping torque is produced

2b) Explain how fluid friction and eddy current damping occurs?

3a) Explain about moving iron instruments

3b) Explain about moving coil (PMMC) instruments

4a) explain about ammeters

4b) explain about voltmeters

5a) explain the construction and working of wattmeter

5b) explain the construction and working of energy meters

6a)explain the construction of CRO

6b)Explain the working principle of CRO

EMT(Electrical & Mechanical Technology) QUESTION BANK

UNIT-4

(Each Question carries 10 Marks)

1. What are the renewable energy forms and explain any two of them?
2. Difference between renewable and non-renewable energy resources
3. What are the laws of thermodynamics?
4. What is the working principle of an IC engine?
5. Write the difference between 4 stroke and 2 stroke engine.
6. What is the difference between petrol engine and diesel engine?
7. Explain the performance parameters of
   (i)IP (ii)BP (iii)SFC (iv)ME

UNIT-5

(Each Question carries 10 Marks)

1. Explain the modes of heat transfer.
2. Derive the general differential equation of heat conduction.
3. Derive the equation for rectangular fin.
4. What is natural convection and forced convection?
5. Explain the emissivity in the black body.

UNIT-6

(Each Question carries 10 Marks)

1. What are the different types of power transmission systems?
2. Explain the power transmission by belts, and derive the equation for that.
3. Explain the classification of gears and it's applications
4. What are the different types of metal joining processes, and explain about gas welding.
5. What is the difference between brazing and soldering?
6. What is mean by metal forming processes, and explain about extrusion process.
7. Classify the types of lathe and explain the operations performed on lathe.

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I B.TECH Question Bank

Subject : Mathematics-III Branch: ECE

Faculty: B.CH.K Preethi.

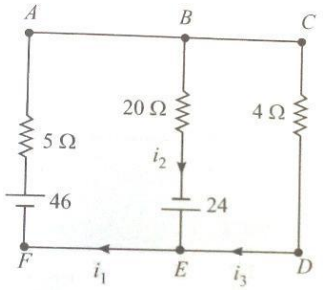
UNIT -I

1(a) Solve the system of equations $20x + y - 2z = 17, 3x + 20y - z = -18, 2x - 3y + 20z = 25$ by Gauss Jacobi method

(b) Reduce the matrix A to normal form and hence find the rank of the matrix

$$A = \begin{bmatrix} 2 & -2 & 0 & 6 \\ 4 & 2 & 0 & 2 \\ 1 & -1 & 1 & 2 \end{bmatrix}$$

2(a) Find the currents in the following circuits



(b) solve the system of equations $10x + y + z = 12$, $2x + 10y + z = 13$ and $2x + 2y + 10z = 14$ using Gauss-seidel method.

3(a) Find the non singular matrices P and Q such that the normal form of A is PAQ where $A = \begin{bmatrix} 1 & 3 & 6 & -1 \\ 1 & 4 & 5 & 1 \\ 1 & 5 & 4 & 3 \end{bmatrix}$. Hence find its rank. 5M

(b) Find the rank of $\begin{pmatrix} 2 & 3 & -1 & -1 \\ 1 & -1 & -2 & -4 \\ 3 & 1 & 3 & -2 \\ 6 & 3 & 0 & -7 \end{pmatrix}$ after reducing it to Echelon form

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I B.TECH Question Bank

Subject : Mathematics-III Branch: ECE

Faculty: B.CH.K Preethi.

4(a) Find the values of 'a' and 'b' for which equation $x + y + z = 3;\ \ x + 2y + 2z = 6; x + ay + 3z = b$ have unique solutions.

(b) using Gauss-jordan method solve the system of equations $2x + y + z = 10,\ \ 3x + 2y + 3z = 18,\ \ x + 4y + 9z = 16$.

5(a) Reduce the matrix A to normal form and hence find the rank of the matrix.

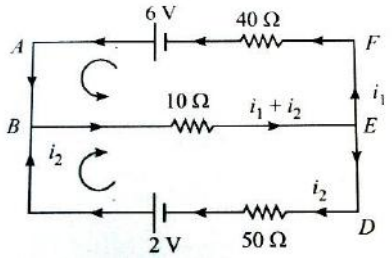
$$A = \begin{bmatrix} 2 & 1 & 3 & 4 \\ 0 & 3 & 4 & 1 \\ 2 & 3 & 7 & 5 \end{bmatrix}$$

(b) prove that the following set of equations are consistent and solve them.

$2x - y - z = 2\ ; x + 2y + z = 2\ ; 4x - 7y - 5z = 2\ ;.$

6(a) Solve the equations $3x + y + 2z = 3, 2x - 3y - -z = -3, x + 2y + z = 4$ using Gauss elimination method.

(b) Find the currents in the following circuits .



UNIT – II:

1(a) Find Eigen values and Eigen vectors of $\begin{bmatrix} 6 & -2 & 2 \\ -2 & 3 & -1 \\ 2 & -1 & 3 \end{bmatrix}$ 5M

(b) Reduce the quadratic form $10x^2 + 2y^2 + 5z^2 - 4xy - 10xz + 6yz$ into canonical form and find the nature, rank, index and signature. 5M

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I B.TECH Question Bank

Subject : Mathematics-III Branch: ECE

Faculty: B.CH.K Preethi.

2(a)Reduce the Quadratic form $3{x_1}^2 + 3{x_2}^2 + 3{x_3}^2 + 2x_1x_2 + 2x_1x_3 - 2x_2x_3$ into sum of squares form by an orthogonal transformation and give the matrix transformation.

(b)Find A^{-1} using Cayley –Hamilton theorem, where $A = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 4 & 5 \\ 3 & 5 & 6 \end{bmatrix}$ 6M

3(a) what is the nature of the quadratic form X^TAX , if $A = \begin{bmatrix} 1 & 1 & 3 \\ 1 & 5 & 1 \\ 3 & 1 & 1 \end{bmatrix}$ 4M

(b)Prove that if τ is an Eigen value of a matrix A then τ^{-1} is an Eigen value of matrix A^{-1} if it exists.

4(a) If τ is an Eigen value of a non singular matrix A then show that $\frac{|A|}{\tau}$ is an Eigen value of matrix adjoint A(adjA)

(b) Find A^{-1} using Cayley –Hamilton theorem, where $A = \begin{bmatrix} 1 & 2 & -1 \\ 2 & 1 & -2 \\ 2 & -2 & 1 \end{bmatrix}$ 6M

5(a) state Cayley-Hamilton theorem and find A^8 if $A = \begin{pmatrix} 1 & 2 \\ 2 & -1 \end{pmatrix}$

(b) Diagonalize the matrix $\begin{bmatrix} 2 & 2 & 1 \\ 1 & 3 & 1 \\ -1 & 2 & 2 \end{bmatrix}$ 6M

6(a) Show that if λ is an eigen value of A, then prove that the eigen value of

$B = a_0A^2 + a_1A + a_2I$ is $a_0\lambda^2 + \boldsymbol{a_1}\lambda + \boldsymbol{a_2}$. **4M**

(b) Is the matrix $\begin{bmatrix} 3 & 10 & 5 \\ -2 & -3 & -4 \\ 2 & 5 & 7 \end{bmatrix}$ diagonalizable ? 6M

UNIT –III :

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I B.TECH Question Bank

Subject : Mathematics-III Branch: ECE

Faculty: B.CH.K Preethi.

1(a) Trace the curve $r^2 = a^2 cos2\theta$

(b) Evaluate $\int_0^a \int_{\frac{x^2}{a}}^{2a-x} xy^2 dydx$ by changing the order of integration. 6M

2(a) Trace the curve $r = sin3\theta$

(b) By changing the order of integration , evaluate $\int_0^1 \int_0^{\sqrt{1-x^2}} y^2 dxdy$ 5M

3(a) Find the moment of inertia about the initial line of the cardioid $r = a(1 - cos\theta)$. 5M

(b) Evaluate $\iiint dx\, dy\, dz$ V is the finite region of space formed by the planes

$x = y = z = 0$ and $2x + 3y + 4z = 12$

4(a) Trace the curve $y^2(2a - x) = x^3$. 5M

(b) Evaluate $\int_0^4 \int_{\frac{y^2}{4}}^{y} \frac{y}{x^2+y^2}\, dx\, dy$

5(a) Trace the curve $r = a + bcos\theta$, $a > b$. 4M

(b)Evaluate $\int_0^{\frac{\pi}{2}} \int_0^{asin\theta} \int_0^{\frac{a^2-r^2}{2}} r\, dz\, dr\, d\theta$

6(a) Evaluate $\int_0^a \int_x^a (x^2 + y^2) dydx$ by changing the order of integration. 5M

(b) Evaluate $\iint (x^2 + y^2) dxdy$ in the positive quadrant for which $x + y \leq 1$. 5M

UNIT – IV:

1(a) Show that $\int_0^\infty \sqrt{x} e^{-x^3} dx = \frac{\sqrt{\pi}}{3}$ 4M

(b) Show that $\int_0^\infty \frac{x^{m-1}}{(a+bx)^{m+n}} dx = \frac{\beta(m,n)}{a^n b^m}$

2(a) Prove that $\Gamma(n)\Gamma(n-1) = \frac{\pi}{sinn\pi}$ 4M

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(b)Prove that $\int_0^{\frac{\pi}{2}} \sqrt{\cos x}\ dx\ \int_0^{\frac{\pi}{2}} \frac{dx}{\sqrt{\cos x}} = \pi$

3(a) Evaluate $\int_0^1 \frac{x^4(1+x^5)}{(1+x)^{15}}\ dx$ 4M

(b) Evaluate $\int_5^7 (x-5)^6(7-x)^3\ dx$ using β and ⌈Γ functions. 6M

4(a) Show that $\Gamma(\frac{1}{2}) = \sqrt{\pi}$ 4M

(b) Show that $B(m,n) = \frac{⌈\Gamma(m)\Gamma⌈(n)}{⌈\Gamma(m+n)}$ where m > 0,n > 0. 6M

5(a) Evaluate $\int_0^{\pi/2} sin^5\theta cos^{7/2}\theta d\theta$. 4M

(b) Evaluate $\int_0^1 x^4 \left(log\frac{1}{x}\right)^3 dx$ 6M

6(a) Evaluate $\int_0^1 \frac{xdx}{\sqrt{1-x^5}}$. 4M

(b) Evaluate $\int_0^\infty x^2 e^{-x^2}\ dx$. 6M

UNIT- V :

1(a) Find unit normal vector to the surfaces $x^2y + 2xz^2 = 8$ at the point (1,0,2)4M

(b) Prove that $div.(gradr^m) = m(m+1)r^{m-2}$ 6M

2(a)Find the angle between the surfaces $x^2 + y^2 + z^2 = 9$ and $z = x^2 + y^2 - 3$ at the point (2, -1 , 2). 4M

(b) If $\bar{A}$ is irrotational , evaluate $div(\bar{A} \times \bar{r})$ where $\bar{r} = x\bar{\imath} + y\bar{\jmath} + z\bar{k}$ 6M

3(a) Find $div\bar{F}$, where $\bar{F} = r^n\bar{r}$. Find n if it is solenoidal. 4M

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(b) Show that $\overline{F} = (y^2 - z^2 + 3yz - 2x)\bar{\imath} + (3xz + 2xy)\bar{\jmath} + (3xy - 2xzy + 2z)\bar{k}$ is both irrotational and Solenoidal . 6M

4(a) Find the directional derivative of $\emptyset = x^2yz + 4xz^2$ at (1,-2,-1) in the direction of $2\overline{i} - \overline{j} - 2\overline{k}$ 4M

(b) Show that the vector $(x^2 - yz)\bar{\imath} + (y^2 - zx)\bar{\jmath} + (z^2 - xy)\bar{k}$ is irrotational and find its scalar potential. 6M

5(a) Show that $\nabla^2(f(r)) = \frac{d^2f}{dr^2} + \frac{2}{r}\frac{df}{dr}$ or $f^{II}(r) + \frac{2}{r}f^{I}(r) where\ r = |\ \overline{r}\ |$.

(b) Prove that $div(\bar{a} \times \bar{b}) = \bar{b}.curl\bar{a} - \overline{a}.curl\bar{b}$ 6M

6(a) Find the angle between the normals to the surfaces $x^2 = yz$ at the points (1,1,1) & (2,4,1)

(b) Show that $\frac{\bar{r}}{r^3}$ is solenoidal, where $\bar{r} = x\bar{\imath} + y\bar{\jmath} + z\bar{k}$ 6M

UNIT – VI:

1(a) Use Greens theorem to evaluate $\int(2xy - x^2)dx + (x^2 + y^2)$dy , where c is theclosed curve of the region bounded by $y = x^2\ and\ y^2 = x$. 4M

(b) State Gauss divergence theorem and verify $\bar{F} = 4xz\bar{\imath} - y^2\bar{\jmath} + zy\bar{k}$ over the cube $x = 0\ \&\ x = 1, y = 0\ \&\ y = 1, z = 0\ \&\ z = 1$.

2(a) Evaluate $\int(e^x dx + 2ydy - dz)$ where c is the curve is the curve is the curve $x^2 + y^2 = 9$, $z = 2$, by using Stoke's theorem. 5M

(b) Compute $\int(ax^2 + by^2 + cz^2)ds$ over the surface of the sphere $x^2 + y^2 + z^2 = 1$. 5M

3(a) If $\bar{F} = (3x^2 + 6y)\bar{\imath} - 14yz\bar{\jmath} + 20xz\overline{k}$ then evaluate $\int \bar{F}.\overline{dr}$ from (0,0,0) to (1,1,1) along $x = t$, $y = t^2, z = t^3$. 4M

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I B.TECH Question Bank

Subject : Mathematics-III Branch: ECE

Faculty: B.CH.K Preethi.

(b) Apply stoke's theorem to evaluate $\int(ydx + zdy + xdz)$ where c is the curve of intersection of the sphere $x^2 + y^2 + z^2 = a^2 and\ x + z = a.$ 6M

4(a) State stoke's theorem,and verify for $\bar{F} = (x + y)\bar{\imath} + (y + z)\bar{\jmath} - x\bar{k}$ and S is the Surface of the plan $2x + y + z = 2$ which is in the first octant . 4M

(b) Using divergence theorem to evaluate $\iint \bar{F}.\overline{ds}$ where $\bar{F} = x^3 i + y^3 j + z^3 k$ and S is surface of the sphere $x^2 + y^2 + z^2 = r^2$. 6M

5(a)Verify Green's theorem in the plan for $\int(x^2 - xy^3)dx + (y^2 - 2xy)dy$ where C is the square with vertices $(0,0), (2,0), (2,2), (0,2)$ 5M

(b) Evaluate by Green's theorem $\oint(y - sinx)dx + cosx\ dy$ where C is the triangle enclosed by the lines y = 0, x = $\frac{\pi}{2}$, πy = 2x. 5M

6(a) If $\bar{F} = xy\bar{\imath} - z\bar{\jmath} + x^2\bar{k}$ and C is the curve $x = t^2, y = 2t\ and\ z = t^3$ from t = 0 to t =1, find the workdone by $\bar{F}$. 4M

(b) Compute the line Intergal $\int(y^2dx - x^2dy)$ round the triangle whose vertices are (1,0) (0,1) and (-1,0). 6M

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Question Bank

Name of the faculty: M.Lalitha Branch: CSE-A&B; ECE

Year/Sem: I/II Department: H & BS

Subject: Environmental studies

Unit-1

1. a) Discuss the scope of environmental education? 5m
   b) What is the role of IT on environment and human health? 5m
2. Why is environmental studies considered as a multi – disciplinary subject? 10m
3. Discuss the causes and effects of global warming. 10m
4. a) Discuss the causes and effects of Acid rains. 5m
   b) Discuss the causes and effects of Ozone depletion. 5m
5. a) What are ecological pyramids? Write about different types of pyramids. 5m
   b) Give an account of energy flow in an ecosystem. 5m
6. Write about structure and function of ecosystem. 10
7. a) Write a short note on food web. 5m
   b) Discuss the phenomenon of ecological succession. 5m
8. Explain the structure and functioning of Forest or grassland ecosystem. 10
9. Describe the structure and functioning of a pond ecosystem. 10m

Unit-2

1. What are renewable and non –renewable energy resources? Give examples. 10m
2. What are the major causes and consequences of deforestation? 10m
3. a) Write about crises and conflict over water. 5m

   b) Write a short note on Soil erosion. 5m
4. What is mining? What are the impacts of mining on environment? 10m
5. a) What is the role of an individual in conservation of natural recourses? 5m

   b) Describe few modern agricultural methods and their consequences. 5m

Unit-3

1. a) Define biodiversity. Write about threats of biodiversity. 5m

   b) What are the three levels of biodiversity? 5m

2. What are the hot spots of biodiversity? 10m

3. What is meant by in situ and ex-situ conservation of biodiversity? Give examples. 10m

4. a) What are the different values of biodiversity? 5m

   b)Write about Endemic and Endangered Species. 10m

Unit-4

1. a) Mention briefly about the various types of pollution. 5m

   b) Briefly describe sources, effects and control of noise pollution. 5m
2. Discuss adverse effects and control of water pollution. 10m

3. Briefly describe sources, effects and control of various Air pollutants. 10m
4. What are the various types of solid waste and methods of safe disposal of solid waste? 10m
5. a) Role of an individual in the prevention of environmental pollution? 5m
   b) Write a note on Bhopal Gas Tragedy. 5m

Unit -5

1. a) What do you understand by environmental ethics? 5m
   b) Discuss the salient features of Wild life protection Act. 5m
2. a) Discuss the salient features of Forest Conversation Act. 5m
   b) What are the major limitations to successful implementation of all environmental legislation? 5m
3. What is rain water harvesting? What are the purposes served by it? 10m
4. a)What are the different methods to propagate environmental awareness in society? 5m
   b) Write a note on Water act. 5m

Unit -6

1. Write about EIA, its significance at various stages. 10m
2. a) Explain about environmental audit? 5m
   b) Discuss about environmental management plan. 5m
3. a) Discuss the concept of ecotourism, its principles and merits. 5m
   b) Write a short note on EIS. 5m

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NH–5, Anakapalle, Visakhapatnam–531002, Andhra Pradesh

Faculty Name: Mr. P.V.Murali Branch: ECE

YEAR/SEM: I/II 2017-18 A.Y

ENGLISH- II QUESTION BANK- I B. TECH (ECE)

Unit- I

1) **A.** Why does the author say that the Know how produced by Science and technology is an unfinished sentence?

B. What is hovercraft?

C. Give synonyms for the following:

i. Strengthen **ii.** Resource

2) **A.** Explain Schumacher views on education?

B. What was the objective of the SLV project?

C. Give the synonyms of the following:

i. Precipitate **ii.** Antecedent

3) **A.** What are the arguments which the author put forward to show that education is necessary?

B. Who helped Kalam design the guidance systems for Agni Missile?

C. Give synonyms for following:

i. Apprehension **ii.** Brink

4) **A.** What should be done to overcome the problems of modern life?

B. Why Abdul Kalam is called the Missile Man of India?

C. Give Antonyms for the following words:

i. Decline **ii.** Civilized

5) **A.** Write a letter to the editor of a leading newspaper on the problem of eve - teasing in your city.

B. Explain the work Kalam did at DRDO.

C. Give Antonyms for the following words:

i. Inferior **ii.** Conceal

6) **A.** How is positive attitude helpful for the students?

B. Name a few awards that Kalam won.

C. Give antonyms for the following words:

i. Culminate **ii.** Persuade

UNIT- II

1) **A.** Describe any modern invention with its positive and negative effects on the society.

B. At what age did Raman join the graduation class? Can you remember an interesting anecdote concerning his English teacher?

C. Write the superlative adjectives for the following words:

i. Beautiful **ii.** Sweet

2) **A.** Who is responsible for the destructive use of scientific inventions- Science or people?

B. What were some of the changes that Raman had initiated at the Indian Institute of Science?

C. Write the superlative adjectives for the following words:

i. Tall **ii.** Bright

3) **A.** What according to the author is the first reaction of a layman to the bomb on Hiroshima?

B. Where did Raman do his M. A. from? What was his subject?

C. Write superlative adjectives for the following words:

i. Clever **ii.** Hard

4) **A.** What are views of author on science and its repercussions?

B. Why did Raman resign from his job after 10 year of service? Why did he take a cut in his salary?

C. Fill in the blanks with appropriate words:

i. SLV stands for **ii.** Kalam's first school was

5) **A.** You are Mr. Deepak, the librarian of KVAFA. Write an email to Rana book depot, Hyderabad requesting them to cancel your order for English literary books and Children's story book. Give reasons for cancellation of the order.

B. Explain the Raman Effect.

C. White synonyms for the following words:

i. Mooting **ii.** Distinguished

6) **A.** Explain the importance of Self-Management.

B. Describe the work that got Raman a Noble Prize.

C. Write the adjective form for the following words:

i. Hunger **ii.** Health

Unit- III

1) A. What is Cultural Shock? Explain.

B. What were the objectives Bhabha wanted to fulfill with the nuclear Programme?

C. Fill in the blank with an appropriate form of the verb given in brackets:

i. The deaf and the blind --- (find) it was very difficult to acquire the amenities of conversation.

ii. She --- (like) coffee compared to tea.

2) A. How does the author define 'culture shock'? What are the symptoms according to him?

B. What was the most devastating event during the World War II?

C. Fill in each blank with an appropriate form of the verb given in brackets:

i. When he --- (come) home I was taking shower.

ii. He --- (finish) homework before I called him.

3) A. Write the four stages of cultural shock.

B. Note contributions of Ernest Rutherford.

C. Fill in the blank with an appropriate form of the verb given in brackets:

i. The train --- (have left) before I reached the station.

ii. She --- (lost) the key just now.

4) A. Prepare a 5 minutes speech expressing your views on the following topic: ***Betting in sports*****.**

B. Who was Dirac? What was his major contribution?

C. Fill in the blank with an appropriate form of the verb given in brackets:

i. She --- (play) football every day.

ii. She --- (go) to church every Sunday.

5) A. Explain Non - Verbal Communication.

B. What were Bhabha's efforts to set up research institute in India?

C. Fill in the blank with an appropriate form of the verb given in brackets:

i. She --- (see) Delhi many times.

ii. She --- (have work) a lawyer since 2000.

6) A. What is Body Language?

B. What is the message of Bhabha to the youth?

C. Fill in the blank with an appropriate form of the verb given in brackets:

i. Summer------ (come) after winter.

ii. She----- (meet) the principal yesterday.

UNIT- IV

1) **A.** What seems to have been the original purpose of the lottery? What do people believe about it?

B. What was Bose's attitude towards education as he grew up?

C. In questions given below out of four alternatives, choose the one which can be substituted for the given word/sentence:

i. That which cannot be corrected

A. Unintelligible B. Indelible C. Illegible D. Incorrigible

ii. The study of ancient societies

A. Anthropology B. Archaeology C. History D. Ethnology

2) **A.** Is it important that the original paraphernalia for the lottery had been lost? What do you suppose the original ceremony was like? Why have some of the villages given up this practice? Why hasn't this one?

B. Why did Bose shift his interest? What were his contributions to the two fields he worked in?

C. In questions given below out of four alternatives, choose the one which can be substituted for the given word/sentence:

i. A person of good understanding knowledge and reasoning power

A. Expert B. Intellectual C. Snob D. Literate

ii. A person who insists on something

A. Disciplinarian B. Stickler C. Instantaneous D. Boaster

3) **A.** Is the lottery a collective act of murder? Is it morally justified? Is tradition sufficient justification for such actions? How would you respond to cultures that are different from ours that perform "strange" rituals?

B. Give an account of Bose's experiments relating to plant responses.

C. In questions given below out of four alternatives, choose the one which can be substituted for the given word/sentence:

i. State in which the few govern the many

A. Monarchy B. Oligarchy C. Plutocracy D. Autocracy

ii. A style in which a writer makes a display of his knowledge

A. Pedantic B. Verbose C. Pompous D. Ornate

4) **A.** Write an essay on- "Global Warming"

B. Write the views of the author on J.C. Bose.

C. In questions given below out of four alternatives, choose the one which can be substituted for the given word/sentence:

i. A person who knows many foreign languages

A. Linguist B. Grammarian C. Polyglot D. Bilingual

ii. One who possesses many talents

A. Versatile B. Nubile C. Exceptional D. Gifted

5) **A.** Write a newspaper report about an accident that took place on the main road in your town.

B. Explain the childhood and early life of J.C. Bose.

C. In questions given below out of four alternatives, choose the one which can be substituted for the given word/sentence:

i. One who eats everything

A. Omnivorous B. Omniscient C. Irascible D. Insolvent

ii. The custom or practice of having more than one husband at same time

A. Polygyny B. Polyphony C. Polyandry D. Polychromic

UNIT- V

1) **A.** How does climate change affect human health?

B. Explain the early life of Prafulla Chandra Ray.

C. Fill the blank with suitable preposition.

i. Peter is playing tennis _____ Sunday.

ii. What are you doing _____ the afternoon?

2) **A.** Write a short note on aeroallergens.

B. What are the contributions and achievements of Prafulla Chandra Ray?

C. Fill the blank with suitable preposition.

i. The shops open _____ nine.

ii. She has never seen the sea _____ winter.

3) **A.** How can we prevent climate change?

B. Explain Assertiveness.

C. Fill the blank with suitable preposition.

i. I have been waiting for you _____ seven o'clock.

ii. I will have finished this essay _____ Friday.

4) **A.** How are morality and excessive heat related?

B. Write an essay on – "Climate Change".

C. Fill the blank with suitable preposition.

i. We are going to see my parents _____ the weekend.

ii. In 1666, a great fire broke out _____ London.

5) **A.** What is public health surveillance and why is it important?

B. Write an article on- "Air Pollution".

C. Fill the blank with suitable preposition.

i. My brother's birthday is _____ the 5th of November.

ii. My birthday is _____ May.

UNIT- VI

1) **A.** What does SMART mean in goal setting?

B. Who is Paul Allen? Write the achievements of Allen with Gates.

C. Fill the gap with the suitable verb.

i. One of my friends _____gone to France. (has / have)

ii. Each of the boys _____ given a present. (was / were)

2) **A.** Why IBM approached Bill Gates? Explain the problems and prospects of their agreement.

B. Who is Srinivasa Ramanujan?

C. Fill the gap with the suitable verb.

i. Neither of the contestants_____ able to win a decisive victory. (was / were)

ii. Oil and water _____ not mix. (do / does)

3) **A.** Explain the family details of Bill Gates.

B. Explain the education and research career of Srinivasa Ramanujan?

C. Fill the gap with the suitable verb.

i. He and I _____ at Oxford together. (was / were)

ii. Slow and steady _____the race. (win / wins)

4) **A.** What are the advantages of team work?

B. Explain the achievements of Ramanujan at Cambridge.

C. Fill the gap with the suitable verb.

i. Neither Peter nor James _____ any right to the property. (has / have)

ii. No prize or medal _____ given to the boy, though he stood first in the examination. (was / were)

5) **A.** Why did Bill Gates and Allen sue a case against the new owner of MITS?

B. Write a report on- "Blood donation camp".

C. Fill the gap with the suitable verb.

i. Either Mary or Alice …… responsible for this. (is / are)

ii. Neither the Minister nor his colleagues ……given any explanation for this. (have / has)