Enrol. No. | S | R | H | U | | | | | | | | | Regn. No. | D | D | | | | | | | | | |

END SEMESTER EXAMINATION, JANUARY - 2026

B. Tech. Semester – I

Course Name: Basic of Electrical and Electronics **Course Code: CCS111T**

Time allotted: 03 Hours **Max. Marks: 100**

NOTE – Read all the instructions carefully.

Q.1.Objective Type: Very short answer questions. Attempt all. **(10 x 2 = 20)**

a.	Define RMS Value of an AC waveform and give its equation.	C.O. - 01
b.	What is the purpose of Current Division Rule?	C.O. – 01
c.	What happens to impedance at series resonance?	C.O. – 01
d.	Define operating point of a transistor.	C.O. – 04
e.	State one function of field winding in a DC machine.	C.O. – 02
f.	What is meant by leading power factor?	C.O. – 02
g.	Write the EMF equation of a transformer secondary winding.	C.O. – 03
h.	Draw the energy band diagrams of metal, semiconductor and insulator.	C.O. – 01
i.	What is depletion region in a PN junction?	C.O. – 04
j.	Write any two advantages of star connection.	C.O. - 02

Q.2. Short Answer Type: Attempt any Five out of seven. **(5 x 4 = 20)**

a.	Explain Kirchhoff's Voltage Law with a simple circuit.	C.O. – 01
b.	A 6-pole DC generator has 720 armature conductors and is lap-wound. The flux per pole is 20 mWb. If speed is 500 rpm, calculate the generated EMF.	C.O. – 03
c.	Explain the construction and function of commutator and brushes.	C.O. – 02
d.	Explain the working principle of a Zener diode as a voltage regulator.	C.O. – 04
e.	Compare self-inductance and mutual inductance.	C.O. – 05
f.	Derive ripple factor equation for a full-wave rectifier with capacitor filter.	C.O. – 04
g.	Write a short note on eddy current loss and its reduction methods.	C.O. – 05

P.T.O.

Q.3. Structured Questions: Attempt any Three out of four. **(3 x 10 = 30)**

a.	A resistor of 15 Ω, an inductor of 0.1 H, and a capacitor of 50 μF are connected in series across a 200 V, 50 Hz supply. Compute: i. Impedance ii. Circuit current iii. Voltage across each element iv. Determine the power factor and real power consumed. and v. State whether the circuit is leading or lagging.	C.O. - 02
b.	A Zener diode with a breakdown voltage of 12 V is connected in series with a 600 Ω resistor across a 24 V ±10% DC supply. A load resistor of 1.2 kΩ is connected across the Zener diode. **(i)** Calculate the Zener current at rated supply voltage. **(ii)** Determine the Zener current for the maximum and minimum input voltages. **(iii)** Calculate load regulation when load resistance changes to 600 Ω.	C.O. - 04
c.	Apply Mesh analysis on Figure 1 and find the i_1, i_2 and i_3.	C.O. – 02
d.	Determine the node voltages V_1, V_2 and V_3 for the network shown in Figure 2.	C.O. - 02

Q.4. Long Answer: (Attempt any Two out of Three.) **(2 x 15 = 30)**

a.	i. Explain the working principle of full-wave center-tapped rectifier and its input and output waveforms. ii. For the network shown in the Figure 3, find the equivalent resistance between the terminals A and B.	C.O. – 04 C.O. - 02
b.	(i) Derive the EMF equation of a single-phase transformer. (ii) A 25 kVA, 2200/220 V, 50 Hz single-phase transformer has a primary resistance of 3 Ω and a secondary resistance of 0.04 Ω. Calculate the equivalent resistance referred to the primary side and the full load copper loss.	C.O. - 03 C.O. - 03
c.	A current source is applied to a parallel combination of R = 10 Ω, L = 1H and C =1 μF. (a) Compute the resonant frequency. (b) Find the quality factor. (c) Calculate the value of the bandwidth. (d) Compute the lower and upper half frequency points of the bandwidth.	C.O. - 02

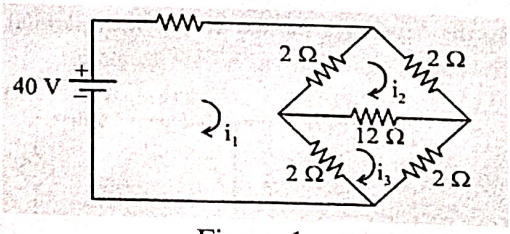

Figure 1.

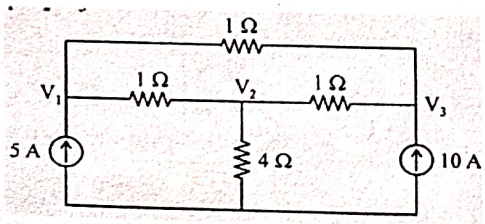

Figure 2.

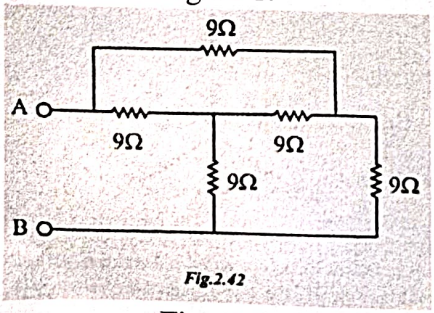

Figure 3.

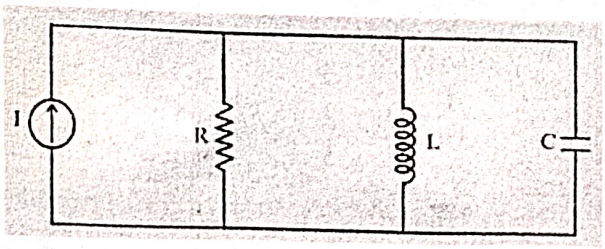

Figure 4.

****

Regn. No. | D | D | | | | | | | | | | | |

END SEMESTER EXAMINATION, JANUARY - 2026

B. Tech. (CSE) Semester – I

Course Name: Programming for Problem Solving **Course Code: CCS112T**

Time allotted: 03 Hours **Max. Marks: 100**

NOTE – Read all the instructions carefully.

Q.1. Attempt all. **(10x2=20)**

QN	Questions	CO	PO
a.	Define algorithm and list its characteristics.	1	1,12
b.	List any four characteristics of a computer system.	1	1,2
c.	Define a token.	2	1
d.	What is purpose of keyword void?	2	2
e.	What is #include, #define directives?	1	1
f.	What is the purpose of adding comments in a program?	1	2
g.	What is pointer increment?	4	2
h.	Define nested structure.	1	2,3
i.	What is fopen()?	4	1
j.	Explain strlen().	3	1,2

Q.2. Attempt any five out of Seven **(5x4=20)**

QN	Questions	CO	PO
a.	Write a C program to sort the given array elements in Ascending order.	3	3,4,5
b.	What do you mean by conditional operator? Explain with proper syntax and example.	2	2,5
c.	Describe multi-dimensional arrays. Explain how to declare, store, and access elements of a 2D array with an example.	3	3,4,5, 12
d.	Explain pointer declaration, initialization, and operations.	2	1,2,5
e.	Write a C program to explain call-by-reference parameter passing technique.	3	1,2,4
f.	What is structure pointer? Explain with a suitable program.	4	1,2
g.	Differentiate between high-level languages, low-level languages, and machine language.	1	2,3

Q.3. Attempt any three out of four **(3x10=30)**

QN	Questions	CO	PO
a.	Attempt all. (3+3+4) (i) What are strings? (ii) How are strings declared in C? (iii) Explain any four string handling functions.	3	1,2, 5
b.	Explain the following terms – (5+5) (i) Functions in C (ii) Array indexing	3	1,2, 12
c.	Attempt all. (3+3+4) (i) Explain fundamental data type and user defined data type in C. (ii) What is static variable and what is its scope? (iii) What is looping in C? What are the advantages of looping?	2	1,2, 5
d.	What are the different **functional components** of a computer system? Discuss the roles of **Input Unit, Output Unit, Memory Unit, ALU, and Control Unit.** Give suitable examples for each component. **(10)**	1	1,2, 3

Q.4. Attempt any two out of three **(2x15=30)**

QN	Questions	CO	PO
a.	(i) Explain the concept of dynamic memory allocation with example.	3	1,2, 4
	(ii) What are the different file operations? Explain different file modes.	5	1,2, 4
b.	(i) Write a C program to find the largest element given in an array of elements.	2	3,5
	(ii) Write a C program to find the factorial of a given number using recursion.		
c.	(i) Explain function prototype, definition, and function call with examples.	3	2,12
	(ii) What is the difference between structure and union? Also explain array of structure with suitable example.	4	3,4, 5

****

Regn. No. | D | D | | | | | | | | | | |

END SEMESTER EXAMINATION, JANUARY - 2026

B. Tech. (CSE)/ B. Tech. (Hons.) (CSE) in AI & ML Semester – I

Course Name: Mathematics I **Course Code: CCS113T**

Time allotted: 03 Hours **Max. Marks: 100**

Q.1. Attempt all. **(10×2=20)**

QN	Questions	CO	PO
a.	Which the standerd notation of $rt - s^2 > 0$ and $r > 0$ then the function f(x,y) has	1	3
b.	Fill in the blank: $\nabla \times \vec{F}$ is called the _____ of the vector field.	4	2
c.	State Euler's theorem for homogeneous functions.	1	1
d.	Jacobian of the transformation (u,v) = (x+y, x−y) is _____.	1	3
e.	If $u = x^{-3} + y^6$ then find $\frac{\delta^2 u}{\delta y \delta x}$	1	4
f.	Find $\frac{\partial z}{\partial x}$ for $z = x^2 + y + 3xy^2$	2	4
g.	Compute divergence of $\vec{F} = (x^2, 3xy, z)$	3	2
h.	Divergence of vector field $\vec{F} = x\hat{i}$ is _____.	3	3
i.	Write the statement of Green's theorem.	3	2
j.	What is the partial derivative of $f(x,y)=x^2y$ with respect to x?	1	3

Q.2. Attempt any five out of Seven **(5 ×4=20)**

QN	Questions	CO	PO
a.	If $x^2 + y^2 + u^2 - v^2 = 0$ and $uv + xy = 0$ then prove that $\frac{\partial(u,v)}{\partial(x,y)} = \frac{x^2-y^2}{u^2+v^2}$	1	3
b.	Find local maximum/minimum of $F(x,y) = x^2 + y^2 - 4x - 6y$	1	4
c.	Change variables to evaluate $\iint_R x^2 + y^2 \, dxdy$, $R: 0 \leq x \leq 1, 0 \leq y \leq 1$.	4	2
d.	Compute directional derivative of $f = x^2 + 2y^2$ at (1,2) in direction of vector $< 3, 4 >$	3	1
e.	Perform one iteration of Gauss-Seidel for $4x + y = 9$, $x + 3y = 8$	5	3
f.	Apply Simpson;s 1/3 rule to approximate $\int_0^2 (x^2 + 1)dx$	5	3
g.	find the Jacobian of transformation : $x = r\cos\theta$, $y = r\sin\theta$	1	4

Q.3. Attempt any three out of four (3×10=30)

QN	Questions	CO	PO
a.	(i) Evaluate the limit: $\lim_{(x,y)\to(0,0)} \left(\frac{x^3-y^3}{x^2+y^2}\right)$ (ii) Evaluate $\frac{\partial^2 z}{\partial x \partial y}$ for $Z = e^{xy}$ (iii) find the local maximum/ minimum $F(x\ y) = x^2 + xy + y^2 - 4x - 3y$	1	4
b.	(i), State and prove Euler's theorem for homogeneous functions. (ii) Find the Jacobian of the transformation $x = u+v$, $y = u-v$ (iii) Expand $f(x,y) = e^{x+y}$ using Taylor's series up to second order.	1	1
c.	(i), Define gradient, divergence, and curl. (ii) Verify Green's theorem for $P = x^2$, $Q = y^2$ over a square region. (iii) Use Gauss divergence theorem to evaluate $\iint_S (x\hat{i} + y\hat{j} + z\hat{k}) \cdot \hat{n}\, dS$ for cube $0 \le x, y, z \le 1$.	3	2
d.	(i) use newton- Raphson method to find roots of $x^3 - 7 = 0$ (1 iteration) (ii) apply Simson 3/8 rule approximate $\int_0^3 (2x+1)dx$ (ii) Construct forward difference table for	5	3

X	0	1	2	3
F(x)	1	2	5	0

Q.4. Attempt any two out of three (2×15=30)

QN	Questions	CO	PO
a.	(i) Evaluate surface integral $\iint_S (x+y+z)dS$ S: $x^2 + y^2 + z^2 = 4$ (ii) Evaluate volume integral $\iiint_V (x + 2y + 3z)\, dV$ V: $0 \le x, y, z \le 1$	4	4
b.	(i) Describe double and triple integrals with applications to area and volume. (ii) Evaluate $\iiint_V (x + y + z)\, dV$ for the tetrahedron bounded by coordinate planes and the plane $x + y + z = 1$	4	2
c.	(i) If $u = \tan^{-1}\left(\frac{x^3+y^3}{x-y}\right)$ prove that (a). $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = \sin 2u$ (b). $x^2\frac{\partial^2 u}{\partial x^2} + 2xy\frac{\partial^2 u}{\partial x \partial y} + y^2\frac{\partial^2 u}{\partial y^2} = 2\cos 3u \sin u$ (ii) if $y_1 = \frac{x2\,x3}{x1}$, $y_2 = \frac{x3\,x1}{x2}$, $y_3 = \frac{x1\,x2}{x3}$ show that the Jacobian of y_1, y_2, y_3 with respect to x_1, x_2, x_3 is 4	1	3

***

END SEMESTER EXAMINATIONS (January 2026)

Program- B. Tech. First Semester

Course Name: Mathematics -I **Course Code: BST111**

Time allotted: 3 Hours **Max Marks: 100**

NOTE – Read all the instructions carefully.

Q.1. Attempt all. **(10×2=20)**

QN	Questions	CO	PO
a.	What is the mathematical condition for the continuity of a function of two variables?	1	1
b.	What is a saddle point?	1	1
c.	How is the Jacobian used in the change of variables for multiple integrals?	1	2
d.	Define the volume element in polar coordinates for triple integration.	2	1
e.	What is the formula for the directional derivative of a scalar field?	3	1
f.	Write the condition for a vector field to be conservative.	3	1
g.	Define work done in terms of a line integral.	4	1
h.	State the Gauss divergence theorem.	4	1
i.	Write the condition for a first-order equation to be exact.	5	1
j.	Write the general solution of a second-order linear differential equation in terms of complementary and particular integrals.	5	1

Q.2. Attempt any five out of Seven. **(5×4=20)**

QN	Questions	CO	PO
a.	Find the n^{th} differential coefficient of $x^3 \log x$ using Leibnitz rule.	1	2
b.	Expand $\log(1+x)$ using Maclaurin's series in ascending powers of x .	1	2
c.	Check the function for continuity $f(x)=\begin{cases}\dfrac{x}{\sqrt{x^2-y^2}}; x\neq 0, y\neq 0 \\ 2; x=0, y=0\end{cases}$ at the origin.	1	2
d.	Find the Extremum of the function $f(x, y)=x^2+y^2+xy+x-4y+5.$	1	2
e.	If $u=\dfrac{x+y}{z}$, $v=\dfrac{y+z}{x}$, $w=\dfrac{y(x+y+z)}{xz}$, determine whether there is a functional relationship between u, v, w and if so, find it.	1	2
f.	Change the order of integration $\int_1^2 \int_0^{\log x} f(x,y)dydx$.	2	2
g.	Change into polar coordinates $\iint_R (x^2+y^2)xdxdy$, R is positive quadrant of the circle $x^2+y^2=4$.	2	2

Q.3. Attempt any three out of four. **(3×10=30)**

QN	Questions	CO	PO
a.	Find the volume generated by revolving the area between the curves $y = x^2$ and $x = y$ around y-axis.	2	2
b.	Find the rate of change of $\phi = xyz$ in the direction normal to the surface $x^2y + y^2x + yz^2 = 3$ at the point $(1, 1, 1)$.	3	2
c.	Determine the constants a and b such that the curl of vector $\vec{F} = (2xy + 3yz)\hat{i} + (x^2 + axz - 4z^2)\hat{j} - (3xy + byz)\hat{k}$ is zero. Also find its scalar potential function.	3	2
d.	Use Gauss Divergence Theorem to evaluate $\iint_S (y^2z^2\hat{i} + x^2z^2\hat{j} + y^2z^2\hat{k}).\hat{n}ds$ where S is the part of the sphere $x^2 + y^2 + z^2 = 1$ above the xy-plane and bounded by this plane.	4	2

Q.4. Attempt any two out of three. **(2×15=30)**

QN	Questions	CO	PO
a.	Verify Stoke's Theorem for $\vec{F} = (x^2 + y - 4)\hat{i} + 3xy\hat{j} + (2xz + z^2)\hat{k}$ over the surface of hemisphere $x^2 + y^2 + z^2 = 16$ above the xy-plane.	4	2
b.	(i) Solve $(y \log y)\, dx + (x - \log y)\, dy = 0$ (ii) Solve $(x^2y^2 + xy)\, y\, dx + (x^2y^2 - 1)\, x\, dy = 0$	5	2
c.	Solve the differential equation $\frac{d^3y}{dx^3} - 7\frac{d^2y}{dx^2} + 10\frac{dy}{dx} = e^{2x}\sin x$	5	2

**

H U | Regn. No. D D

END SEMESTER EXAMINATION, JANUARY - 2026

B. Tech. (Hons.) (CSE) in AI, DS & Cyber Security Semester – I

Course Name: English-I **Course Code: HS111T**

Time allotted: 03 Hours **Max. Marks: 100**

Note: Read all the instructions carefully.

Q.1 VERY SHORT ANSWER QUESTIONS – *Attempt All.* **(2x10 = 20 Marks)**

Do as directed type questions.

a. Change the sentence from present simple to future continuous tense: "He reads a book every weekend." CO2

b. Write the antonyms of given words: CO1
1.Offensive 2. Pertinent

c. Break and count syllable in below given words: CO2
1.Apple 2. Synchronic

d. Convert the given sentence into the passive voice: CO2
"She will teach the class tomorrow."

e. Write the synonyms of given words: CO2
1. Prominent 2. Stubborn

f. Convert the sentence from present perfect to future perfect: CO1
"We have completed the project."

g. What is Rise-fall intonation? CO1

h. Choose appropriate preposition. CO2
The movie starts _____ 7:30 PM. (by/at)

i. Define intonation process? CO1

j. Recall language learning and language acquisition. CO1

Q.2 SHORT ANSWER QUESTIONS – *Attempt any Five.* **(4x5 = 20 Marks)**

a. Identify one barrier to effective listening and suggest a solution for overcoming it. CO3

b. How can reflective response contribute to better understanding in communication? CO3

c. Analyze the process of listening, breaking down its stages and explaining the significance of each stage. CO3

d. What do you understand by information overload? Explain with an example. CO3

e. Define the importance of reading and its role in education. CO4

f. List two strategies for developing skimming skills. CO4

g. Evaluate the different types of reading and their respective applications in various contexts. CO4

Q.3 STRUCTURED QUESTIONS – *Attempt any Three.* **(3x10 = 30 Marks)**

a. Analyze the strategies for improving reading skills, considering both short-term and long-term benefits. CO4

b. Evaluate the impact of reflective responses in resolving misunderstandings during communication. CO4

c. Briefly define intonation and its role in spoken language. CO5

d. Analyze the effectiveness of evaluation in listening comprehension. CO5

Q.4 Case Analysis/ Situation Based QUESTIONS – *Attempt any Two.* **(2x15 = 30 Marks)**

a. Formulate a detailed guide on formal letter writing. Include essential elements, formatting rules, and the appropriate language to be used in different formal correspondence situations. CO5

b. Create a narrative paragraph telling a short story or recounting a personal experience. CO6

c. Imagine you recently purchased a product or service that did not meet your expectations. Write a formal letter to the company or service provider expressing your dissatisfaction, outlining the issues you encountered, and suggesting possible solutions. CO6

H U | Regn. No. D D

END SEMESTER EXAMINATION, JANUARY - 2026

B. Tech. Semester - I

Course Name: English Communication **Course Code: CCS114T**

Time allotted: 03 Hours **Max. Marks: 100**

Note: Read all the instructions carefully.

Q.1. Objectives Type

(Very short/ Short Answer, MCQ, One-liners, Fill in the Blank, True/ False) Attempt all. **(10×2=20)**

a.	How does maintaining eye contact improve listening?	PO7/CO7
b.	How does pre-judgment act as a barrier to effective listening?	PO7/CO7
c.	How does intonation convey the speaker's attitude or emotion?	PO7/CO5
d.	How does extensive reading differ from intensive reading?	PO7/CO2
e.	What is the difference between formal and informal letters?	PO7/CO3
f.	Why is understanding vocabulary important for comprehension?	PO7/CO6
g.	How does receiving differ from understanding in the listening process?	PO7/CO7
h.	Mention any two strategies that make reading more effective.	PO7/CO2
i.	Why is recording and reviewing one's speech useful?	PO7/CO5
j.	Explain the importance of accuracy in effective writing.	PO7/CO3

Q.2. Short notes / Short Answer Type (Attempt any five out of Seven) **(5x4=20)**

a.	Discuss the role of note-taking and summarizing in enhancing listening effectiveness.	PO7/CO7
b.	Explain primary and secondary stress with an example.	PO7/CO5
c.	Explain how inference is used to understand implied meanings in a text. Give an example.	PO7/CO2
d.	Describe skimming as a type of reading and discuss situations where it is effectively used.	PO7/CO2
e.	Differentiate between listening and hearing. Provide at least four points of distinction with examples.	PO7/CO7
f.	What is 'Correctness' in business correspondence? Describe its key elements.	PO7/CO3
g.	Explain the importance of clarity as a principle of effective writing with suitable examples.	PO7/CO4

Q.3. Structured Question (Attempt any three out of four) **(3x10=30)**

a.	Discuss the role of prediction, questioning, and visualizing as strategies to enhance reading comprehension. Provide examples.	PO7/CO2
b.	A company sends a vague email about salary revisions, causing confusion among employees. Evaluate which of the 5 Cs is missing and justify how the email should be rewritten.	PO7/CO3
c.	Explain the importance of audience awareness in speaking. How should speakers adapt tone, style, and language according to the audience?	PO7/CO5
d.	Discuss the guidelines for writing persuasive letters. Explain how structure, tone, and content contribute to persuasion.	PO7/CO3

Q.4. Long Answer / Essay type (Attempt any two out of three) **(2x15=30)**

a.	Write a letter to the Public Works Department requesting repair of potholes and damaged roads in your locality.	PO7/CO3
b.	Analyse the psychological effects of smartphone addiction on teenagers.	PO7/CO3
c.	**Read the passage given below and answer the questions that follow:** PO7/CO2 1. For many years now the Governments have been promising the eradication of child labour in hazardous industries in India. But the truth is that despite all the rhetoric no Government so far has succeeded in eradicating this evil, nor has any been able to ensure compulsory primary education for every Indian child. Between 60 and 100 million children are still at work instead of going to school, and around 10 million are working in hazardous industries. India has the biggest child population of 380 million in the world; plus the largest number of children who are forced to earn a living.	

2. We have many laws that ban child labour in hazardous industries. According to the Child (Prohibition and Regulation) Act 1986, the employment of children below the age of 14 in hazardous occupations has been strictly banned. But each state has different rules regarding the minimum age of employment. This makes the implementation of these laws difficult.

School supplies

3. Also, there is no ban on child labour in non-hazardous occupations. The act applies to the organised or factory sector and not the unorganized or informal sector where most children find employment as cleaners, servants, porters, waiters, among other forms of unskilled work. Thus, child labour continues because the implementation of the existing law is lax.

4. There are industries, which have a special demand for child labour because of their nimble fingers, high level of concentration and capacity to work hard at abysmally low wages. The carpet industry in U.P. and Kashmir employs children to make hand-knotted carpets. There are 80,000 child workers in Jammu & Kashmir alone. In Kashmir because of the political unrest, children are forced to work while many schools are shut. Industries like gem cutting and polishing, pottery and glass want to remain competitive by employing children.

5. The truth is that it is poverty which is pushing children into the brutish labour market. We have 260 million people below the poverty line in India, a large number of them are women. Poor and especially woman-headed families have no option but to push their little ones in this hard life in hostile conditions, with no human or labour rights.

6. There is a lobby which argues that there is nothing wrong with children working as long as the environment for work is conducive to learning new skills but studies have shown that the children are made to do boring, repetitive and tedious jobs and are not taught new skills as they grow older. In these hellholes like the sweet shops of the old, there is no hope.

7. Children working in hazardous industries are prone to debilitating diseases which can cripple them for life. By sitting in cramped, damp and unhygienic spaces, their limbs become deformed for life. Inside matchstick, fireworks and glass industries they are victims of bronchial diseases and T.B. Their mental and physical development is permanently impaired by long hours of work. Once trapped, they can't get out of this vicious circle of poverty. They remain uneducated and powerless. Finally, in later years, they too are compelled to send their own children to work. Child labour perpetuates its own nightmare.

Learning resources subscription

8. If at all the Government was serious about granting children their rights, an intensive effort ought to have been made to implement the Supreme Court's Directive of 1997 which laid down punitive action against employers of child labour. Only compulsory primary education can eliminate child labour.

9. Surely, if 380 million children are given a better life and elementary education, India's human capital would be greatly enhanced. But that needs, as former President Abdul Kalam says, "a Second"

a) Answer the following questions:

(i) On which two counts has the Government not succeeded so far in respect of children? 2

(ii) What makes the implementation of child labour law difficult? 2

(iii) Why do industries prefer child labour?

(iv) What are the adverse effects of hazardous industries on children? Given any two. 2

(v) What does the Supreme Court's Directive of 1997 provide? 1

(b) Find words from the passage which mean the same as the following: 2×3=6

(i) risky/dangerous (para 1)

(ii) very unfriendly (para 5)

(iii) intended as punishment (para 8)

****

S R H U

Regn. No. D D

END SEMESTER EXAMINATION, JANUARY - 2026

B. Tech. (CSE) Semester – I

Course Name: Environmental Studies **Course Code: MDS111T**

Time allotted: 03 Hours **Max. Marks: 100**

Q.1. Attempt all. **(10×2=20)**

QN	Questions	CO	PO
a.	Aquarium is an example of micro-ecosystem. (True/False)	2	7
b.	Ozone layer is present in _____ layer of atmosphere.	3	12
c.	Define food chain.	2	7
d.	The cycling of matter in an ecosystem is called ecological succession. (True/False)	2	7
e.	What is gasohol?	2	7
f.	Name two greenhouse gases.	3	7
g.	What is eutrophication?	2	7
h.	Define aerosol.	2	7
i.	Write two effects of climate change.	3	12
j.	Wildlife Protection act was enacted in 1972. (True/False)	1	7

Q.2. Attempt any five out of Seven. **(5×4=20)**

QN	Questions	CO	PO
a.	Write short note on multidisciplinary nature of environmental studies.	1	7
b.	Brief the characteristics of desert ecosystem.	2	7
c.	What are the consequences of big hydropower dams on environment?	2	12
d.	Brief the concept of megadiversity nation.	2	7
e.	Describe the role on individual in environmental protection.	4	7,12
f.	Write short note on Kyoto Protocol.	3	7
g.	Write the effects of overpopulation.	1	12

Q.3. Attempt any three out of four. **(3×10=30)**

QN	Questions	CO	PO
a.	Describe the principles and objectives of sustainable development.	1	7
b.	Explain nitrogen cycle in detail with diagram.	2	7
c.	Discuss the productive and protective functions of the forest.	2	7,12
d.	Explain the significance of appropriate environmental communication.	2	7

Q.4. Attempt any two out of three. **(2×15=30)**

QN	Questions	CO	PO
a.	Describe the various approaches used to manage solid waste.	4	7,12
b.	Describe the process of ozone layer depletion with chemical reactions. Also write a short note on the significance of ozone layer.	3	12
c.	i. How environmental problems can be minimized at individual and society level? ii. Brief about your observations based on environmental field visit/studies.	5 1	6 12

***

No. S R H U | Regn. No. D D

END SEMESTER EXAMINATION, JANUARY - 2026

B. Tech. (Hons.) (CSE) in AI, DS & Cyber Security Semester – I

Course Name: Environmental Studies **Course Code: HST112**

Time allotted: 03 Hours **Max. Marks: 100**

Q.1. Attempt all. **(10×2=20)**

QN	Questions	CO	PO
a.	Give two examples of manmade environment.	1	7
b.	Ozone layer is present in _____ layer of atmosphere.	2	12
c.	Define food chain.	2	7
d.	The cycling of matter in an ecosystem is called ecological succession. (True/False)	2	7
e.	Incineration process is used to burn solid waste. (True/False)	3	7
f.	Sound level is measured in _____.	2	7
g.	The Silent valley movement was started in 1970. (True/False)	1	7
h.	Define aerosol.	2	7
i.	Write the constituents of acid rain.	2	12
j.	Wildlife Protection act was enacted in 1972. (True/False)	1	7

Q.2. Attempt any five out of Seven. **(5×4=20)**

QN	Questions	CO	PO
a.	Write short note on multidisciplinary nature of environmental studies.	1	7
b.	Brief the characteristics of forest ecosystem.	2	7
c.	What are the consequences of big hydropower dams on environment?	2	12
d.	Why India is a mega-diversity nation in terms of biodiversity?	1	6
e.	Write short note on sanitary landfills.	2	12
f.	Write short note on Kyoto Protocol.	2	7
g.	Write the effects of overpopulation.	2	12

Q.3. Attempt any three out of four. **(3×10=30)**

QN	Questions	CO	PO
a.	Describe the principles and objectives of sustainable development.	3	3
b.	Brief on different types of terrestrial ecosystem.	2	7
c.	Discuss the regulative and protective functions of the forest.	1	12
d.	Differentiate between in-situ and ex-situ biodiversity conservation practices.	2	12

Q.4. Attempt any two out of three. **(2×15=30)**

QN	Questions	CO	PO
a.	Describe the various approaches used to manage solid waste.	4	12
b.	Brief the process of ozone layer formation and depletion. Also write a short note on the significance of ozone layer.	2	12
c.	i. How environmental problems can be minimized at individual level? ii. Brief about your observations based on environmental field visit/studies.	4 3	10 12

***

...o. | S | R | H | U | | | | | | | | Regn. No. | D | D | | | | | | | | | |

END SEMESTER EXAMINATION, JANUARY - 2026

B. Tech. (Hons.) (CSE) in AI, DS & Cyber Security Semester – I

Course Name: Fundamental of Computer & IT **Course Code: CST111**

Time allotted: 03 Hours **Max. Marks: 100**

Q.1. Objectives Type

(Very short/ Short Answer, MCQ, One-liners, Fill in the Blank, True/ False) Attempt all. **(10×2=20)**

		CO	PO
a.	Distinguish between Analog computer and Digital computers.	1	1
b.	Define computer, and also write the names of 5- input and 5- output devices.	1	1
c.	Mention the base for decimal, hexadecimal, binary, and octal number systems.	2	2
d.	Find decimal equivalent of the octal number 127.54.	2	2
e.	Name some popular secondary storage devices used in today's computer systems.	1	1
f.	Define topology	3	1
g.	Write the purpose of Web browser software.	4	1
h.	Define modem	4	1
i.	**Write the key features of Microsoft Windows.**	**2**	**2**
j.	Explain firewall.	5	1

Q.2. Short notes / Short Answer Type (Attempt any five out of Seven) **(5×4=20)**

a.	Discuss each generation of computers according to hardware and software technology basis.	1	1
b.	Define operating system, and mention the various services provided by the operating systems.	2	2
c.	Explain Cloud computing, and write the services provided by the cloud computing.	3	2
d.	Write a brief note on IP addressing used in the computer networking.	4	1
e.	Describe the different types of security threats to the computer networks.	5	1
f.	Define the following terms in respect to network security: confidentiality, integrity, authentication, and authorization.	5	2
g.	Distinguish between GUI and CUI.	2	2

Q.3. Structured Question (Attempt any three out of four) **(3×10=30)**

a.	(i)	Define input devices, and also explain any 3-popular input devices	1	1
	(ii)	Mention the purpose of an output device, and explain plotter and projector as the output devices.		
b.	(i)	Distinguish between a super computer and mainframe system.	1	1
	(ii)	List the difference between RAM and ROM.		
c.	(i)	Explain the following terms used in internetworking: Bridge, Router, and Gateway.	3	2
	(ii)	Differentiate among LAN, MAN, WAN and PAN.		
d.	(i)	Define electronic mail (e-mail), and write the procedure of sending and receiving the emails.	4	2
	(ii)	Define Internet. Name the four basic services provided by the Internet.		

Q.4. Long Answer / Essay type (Attempt any two out of three) **(2×15=30)**

a.	Convert the following Number System:		2	2
	(i)	$(247.65)_8 = ?_{10}$		
	(ii)	$24_9 = ?_3$		
	(iii)	$(2B.D4)_{16} = ?_{10}$		
b.	(i)	Explain HTTP and HTTPS protocols in detail.	4	3
	(ii)	Compare between TCP and UDP.		
c.	(i)	Explain MAC addressing in detail.	4	3
	(ii)	Explain IP addressing in detail.		

****