Hall Ticket Number :										

R-20

Code: 20AC15T

I B.Tech. I Semester Supplementary Examinations November 2021

Communicative English

(Common to CE, ME, CSE and AI&DS)

Max. Marks: 70 Time: 3 Hours

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Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. In Part-A, each question carries **Two mark.**
3. Answer **ALL** the questions in **Part-A** and **Part-B**

PART-A
(Compulsory question)

		CO	Blooms Level
1.	**Answer ALL the following short answer questions** (5 X 2 = 10M)		
a)	Why does the author ask his son to be courteous and polite to his classmates?	CO1	L2
b)	'For men may come and men may go/but I go on forever'. What does it say about Nature?	CO2	L2
c)	How does the doctor stop the conspirators from killing the prince, Dimitri? What is the irony behind the trick?	CO3	L2
d)	How does Muhammad Yunus help the poor women in Bangladesh?	CO4	L2
e)	Write a few words about Darpana Academy of Performing Arts started by Mrinalini Sarabhai.	CO5	L2

PART-B
Answer *five* questions by choosing one question from each unit (5 x 12 = 60 Marks)

		Marks	CO	Blooms Level
	UNIT–I			
2.	The author, Hazlitt, feels that in being school/hostel will teach his son about how to get along with others and prepare him for the ups and downs of the life. Do you agree with his belief? Have you found this to be true on your own situation in college? Explain with examples from the text and your own personal experience?	12M	CO1	L4
	OR			
3. a)	Change the following statements into questions. i. They have been working hard for their exams. ii. My father presented me a watch. iii. Barbara gave me chocolates. iv. They were waiting for an hour. v. She comes from the United States. vi. I can have a branded watch for my birthday.	6M	CO3	L4
b).	Identify the parts of speech of the underlined words in the following sentences. i. The sun <u>shone</u> through a gap in the <u>dull</u> grey clouds. ii. The <u>service</u> in the restaurant was really <u>quick.</u> *iii.* She was very <u>impressed</u> with her <u>results</u>.	6M	CO3	L4
	UNIT–II			
4.	Who is the speaker of the poem, "The Brook"? What is the technique of investigating humanqualities into non-living things called? Why do you think the poet has chosen to use this technique here? How does it contribute to the effect of the poem?	12M	CO1	L2
	OR			

5. Develop the following hints into a meaningful paragraph:

- Self-confidence - key to success - when you don't have self-confidence - feel inferior, isolated, depressed- Success comes to people who have a belief on them - self-confidence helps a person to focus on the required things - If we have self-confidence, we have more chances of success in our life - we should believe on ourselves.

12M CO4 L3

UNIT–III

6. Discuss the significance of the title 'The Death Trap'? 12M CO1 L3

OR

7. a) Rearrange each group of jumbled sentences below so as to have well-written paragraphs.

i. It must be viewed, as some new epidemic would be viewed, as common peril to be met by concerted action.

ii. If we are to think wisely about the new problems raised by nuclear weapons, we must learn to view the whole matter in a quite different way.

iii. These conflicts are so virulent and so passionate that they produce a wide spread inability to understand even very obvious matters.

iv. It is a profound misfortune that the whole question of nuclear warfare has become entangled in the age-old conflicts of power politics. 7M CO4 L4

b) Fill in blanks in the sentences below using appropriate form of the verb in brackets.

i. Listen! Somebody_____ (knock) at the door.
ii. The workers _____ (work) in the field since early morning.
iii. The thief_____ (escape) before the police arrived.
iv. I usually _____ (visit) Varanasi every year.
v. The servant _____(clean) the table just now. 5M CO4 L4

UNIT–IV

8. Discuss the role of Muhammad Yunus in developing microcredit system in Bangladesh. 12M CO2 L4

OR

9. Prepare an analytical essay on the topic, " Negative Effects of Modern Technology" 12M CO4 L4

UNIT–I

10. Correct the following sentences and rewrite them. 12M CO3 L3

i. I am knowing all the grammar, but it's difficult to remember.
ii. At the party, I met the boss of my father who is really very nice.
iii. Where you did go last night? I looked everywhere for you.
iv. I made a lot of stupids mistakes in the exam because I was in such a panic.
v. My friend who works for Sony he is an engineer.
vi. He likes read books and play the guitar during his leisure time.
vii. Can you please sponsor the event to be organize on our campus in the next month?
viii. People in France must to carry their identity cards at all times.
ix. One of the clerk in the bank promised me to release personal loan as early as possible.
x. I advised my children to prepared well for the online entrance test.
xi. Seasonal fruits are said to being very good for our health.
xii. It's very nice to have a little sleep after have lunch.

OR

11. In the words of Mrinalini Sarabhai "Dance is the breath of my life and the stage is my mother". Do you think that the dancer devoted her entire life for the development of Indian classical dance?

*** End ***

Hall Ticket Number :										

R-20

Code: 20A311T

I B.Tech. I Semester Supplementary Examinations November 2021

Engineering Graphics-I

(Mechanical Engineering)

Max. Marks: 70 Time: 3 Hours

Answer any *five full* questions by choosing one question from each unit (5 x 14 = 70 Marks)

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			Marks	CO	Blooms Level
		UNIT–I			
1.		Construct a parabola using general method, when the distance of the focus from the directrix is 50mm. Also draw tangent and normal at any point on the curve.	14M	1	L6
		OR			
2.	a)	A point P is 30mm and 50mm respectively from two straight lines which are at right angles to each other. Draw the rectangular hyperbola from P within 10mm distance from each line.	7M	1	L4
	b)	Inscribe an ellipse in parallelogram having sides 150 mm and 100 mm long and an included angle of 120^0.	7M	1	L4
		UNIT–II			
3.		A circle of 50 mm diameter rolls along a straight line without slipping. Draw the curve traced by a point P on the circumference, for one complete revolution of the circle. Name the curve. Draw a tangent to the curve at a point on it 40mm from the line.	14M	2	L4
		OR			
4.	a)	A regular pentagonal plate of 30mm side is fixed at its center. An inelastic rope is circumscribed along the perimeter of the pentagon. Draw the path of the free end of the rope when it is unwounded keeping, tight for one complete turn.	7M	2	L4
	b)	Draw an involute of an equilateral triangle of 30 mm side. Draw tangent and normal at any point on the curve.	7M	2	L4
		UNIT–III			
5.	a)	Two points F and G are on H.P. The point F being 15mm in front of V.P, while G is 20 behind V.P. The line joining their top views makes an angle of 45^0 with XY line. Find the horizontal distance between the two points.	7M	3	L4
	b)	A point M is 15mm above H.P, 10mm in front of V.P and 10mm in front of P.P. Draw front view, top view and left side view of the point.	7M	3	L4
		OR			
6.		A line CD 80 mm long is inclined at an angle of 30^0 to H.P and 45^0 to V.P. The point C is 20 mm above H.P. and 30 mm in front of V.P. Find the apparent inclinations and also draw the traces.	14M	3	L4
		UNIT–IV			
7.		A rectangular plate of negligible thickness having 150 mm length and 100 mm width is resting on one of its smaller side on HP. The surface makes an inclination of 30^0 to HP and smaller side makes an inclination of 60^0 to VP. Draw the projection of the plate.	14M	4	L4
		OR			
8.		Draw the projections of a circle of 50mm diameter resting in the H.P with a point 'A' on the circumference. Its plane is inclined at 45^0 to the HP and the top view of the diameter AB making an angle of 30^0 with the VP.	14M	4	L4
		UNIT–V			
9.		A line AB 50 mm long is inclined at 30^0 to the H.P and its top view makes an angle of 60^0 with the V.P. Draw its projections using Auxiliary plane method.	14M	5	L4
		OR			
10.		A regular Hexagon of 30 mm side has one side on the ground. Its plane is inclined 45^0 to the H.P and perpendicular to the VP. Draw its projections of the plane using auxiliary plane method.	14M	5	L4

*** End ***

Hall Ticket Number :										

R-20

Code: 20AC14T

I B.Tech. I Semester Supplementary Examinations November 2021

Engineering Chemistry

(Common to CE & ME)

Max. Marks: 70 Time: 3 Hours

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Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. In Part-A, each question carries **Two mark.**
3. Answer **ALL** the questions in **Part-A** and **Part-B**

PART-A

(Compulsory question)

			CO	Blooms Level
1.	**Answer ALL the following short answer questions**	(5 X 2 = 10M)		
a)	What is hard water		CO1	L1
b)	Define electrode potential		CO2	L1
c)	What is functionality of a monomer		CO3	L1
d)	Define the term cement		CO4	L1
e)	What are 2D nanomaterials		CO5	L1

PART-B

Answer any *five full* questions by choosing one question from each unit (5 x 12 = 60 Marks)

			Marks	CO	Blooms Level
		UNIT–I			
2.	a)	Write a note on priming and foaming in boiler trouble	6M	CO1	L1
	b)	List the specification for drinking water as per **BIS** standard	6M	CO1	L3
		OR			
3.	a)	Explain industrial waste water treatment by zeolite process	6M	CO1	L4
	b)	Describe the desalination of brackish water by electrodialysis	6M	CO1	L3
		UNIT–II			
4.	a)	Write a note on electrochemical series and its applications	6M	CO2	L3
	b)	Explain the construction and working of hydrogen-oxygen fuel cell.	6M	CO2	L3
		OR			
5.	a)	Describe corrosion control by sacrificial and Impressed current cathodic protection methods	6M	CO2	L3
	b)	Explain anodic and cathodic inhibitors with examples	6M	CO2	L3
		UNIT–III			
6.	a)	Distinguish between chain growth and step growth polymerization	6M	CO3	L3
	b)	Explain the preparation, properties and uses of Bakelite	6M	CO3	L2
		OR			
7.	a)	Calculate the gross and net calorific values of a coal sample from the following data obtained in a Bomb calorimetric experiment. (i) Weight of coal = 0.65 kg (ii) Weight of water taken in calorimeter = 1200 kg (iii) Water equivalent of calorimeter = 400 kg (iv) Latent heat of steam = 2454 kJ/kg (v) Percentage of hydrogen = 2% (vi) Rise in temp = 1.8 °C (vii) Specific heat of water= 4.187 kJ/kg/°C	6M	CO3	L3
	b)	Write a note on propane and power alcohol	6M	CO3	L2
		UNIT–IV			
8.	a)	Write a note on composite materials? List properties and engineering application of composite materials	6M	CO4	L2
	b)	Describe the classification and applications of refractories	6M	CO4	L2
		OR			
9.	a)	Illustrate the properties and applications of lubricating oils	6M	CO4	L2
	b)	Enumerate setting and hardening of cement with relevant reactions	6M	CO4	L3
		UNIT–V			
10.	a)	Discuss the characterization of nanomaterials by SEM technique	6M	CO5	L4
	b)	Illustrate the applications of nanomaterials in waste water treatment	6M	CO5	L2
		OR			
11.	a)	Write a note on shape memory alloys	6M	CO5	L1
	b)	Describe the applications of Smart materials	6M	CO5	L2

*** End ***

Hall Ticket Number :										

R-20

Code: 20A511T

I B.Tech. I Semester Supplementary Examinations November 2021

Problem Solving through C Programming

(Common to All Branches)

Max. Marks: 70 Time: 3 Hours

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Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. In Part-A, each question carries **Two mark.**
3. Answer **ALL** the questions in **Part-A** and **Part-B**

PART-A
(Compulsory question)

			CO	Blooms Level
1.	**Answer ALL the following short answer questions**	(5 X 2 = 10M)		
	a) Evaluate the expressions given below if a=10, b=20: (i) a/b + (a / (2 * b)) (ii) a % 6 / b%3		CO1	L5
	b) Differentiate between break and continue.		CO2	L2
	c) Discuss about some string functions		CO3	L2
	d) Define structures.		CO4	L4
	e) Write any five functions used in file i/o operations.		CO5	L2

PART-B
Answer any *five full* questions by choosing one question from each unit (5 x 12 = 60 Marks)

			Marks	CO	Blooms Level
		UNIT–I			
2.	a)	Draw a flowchart for displaying the sum of n numbers. Accept 'n' from user.	6M	CO1	L6
	b)	What is a conditional expression operator? Use conditional expression operator to determine smallest of two numbers.	6M	CO1	L1
		OR			
3.	a)	Write an algorithm and draw flowchart for finding greatest among three given numbers.	6M	CO1	L3
	b)	Explain about type conversions. Why there is a need to have them? Explain with suitable example.	6M	CO1	L2
		UNIT–II			
4.	a)	What is the need of the iterations and selection? Explain each of the statements with examples.	6M	CO2	L1
	b)	Write a program that asks user an arithmetic operator ('+', '-', '*' or '/') and two operands and perform the corresponding calculation on the operands. Use a switch statement	6M	CO2	L3
		OR			
5.	a)	Differentiate between entry- control and exit-control loops with an example	6M	CO2	L2
	b)	Write a program to find smallest and largest numbers in a given array using Bubble Sort.	6M	CO2	L3

UNIT–III

6.	a)	How to declare string? Differentiate between character array and strings?	6M	CO3	L1
	b)	Demonstrate about different string functions which can be performed on strings	6M	CO3	L3
		OR			
7.	a)	Write a C program to find the average of n numbers using functions	6M	CO3	L3
	b)	How many types of storage classes does C supports? What is the necessity of each?	6M	CO3	L1

UNIT–IV

8.	a)	Write a program to swap two numbers using pointers.	6M	CO4	L1
	b)	Elaborate the importance of dynamic memory allocation with example.	6M	CO4	L2
		OR			
9.	a)	How can a pointer be used to access individual elements of an array? Explain with an example.	6M	CO4	L1
	b)	Explain Advantages and Drawbacks of Pointers.	6M	CO4	L2

UNIT–V

10.	a)	Differentiate union and structures? Explain both with examples.	6M	CO5	L1
	b)	Define and declare a structure to store date, which including day, month and year and explain.	6M	CO5	L2
		OR			
11.	a)	Differentiate between text files and binary files? Discuss about the concept of a file	6M	CO5	L2
	b)	Write a program to open a file and read the file and print the file contents.	6M	CO5	L1

*** End ***

Hall Ticket Number :										

R-20

Code: 20AC11T

I B.Tech. I Semester Supplementary Examinations November 2021

Algebra and Calculus

(Common to All Branches)

Max. Marks: 70 Time: 3 Hours

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Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. In Part-A, each question carries **Two mark.**
3. Answer **ALL** the questions in **Part-A** and **Part-B**

PART-A
(Compulsory question)

				Blooms Level
1.	**Answer ALL the following short answer questions** (5 X 2 = 10M)		CO	
	a) Find the Rank of the matrix A= $\begin{bmatrix} 1 & 2 & 3 \\ 3 & 4 & 5 \\ 4 & 5 & 6 \end{bmatrix}$		1	1,2
	b) State Cayley-Hamilton theorem		2	1
	c) Obtain Meclaurin's series for f(x) = sin x		3	1,2
	d) Find $\int_0^1 \int_0^1 (x+y)\,dx\,dy$		4	1,2
	e) Define Beta function		5	1

PART-B
Answer any *five full* questions by choosing one question from each unit (5 x 12 = 60 Marks)

			Marks	CO	Blooms Level
		UNIT–I			
2.	a)	Find the rank of the matrix $\begin{bmatrix} 1 & -2 & 0 & 1 \\ 2 & -1 & 1 & 0 \\ 3 & -3 & 1 & 1 \\ -1 & -1 & -1 & 1 \end{bmatrix}$ by echelon form	6M	1	1,2
	b)	Find whether the following equations are consistent, if so solve them. x+y+2z=4; 2x-y+3z=9; 3x-y-z=2	6M	1	1,2
		OR			
3.		Find the eigen values and the corresponding eigen vectors of A= $\begin{bmatrix} 6 & -2 & 2 \\ -2 & 3 & -1 \\ 2 & -1 & 3 \end{bmatrix}$	12M	1	1,2
		UNIT–II			
4.		Verify Cayley-Hamilton theorem for the matrix A= $\begin{bmatrix} 1 & 2 & 3 \\ 2 & 4 & 5 \\ 3 & 5 & 6 \end{bmatrix}$ and hence find A^{-1} and A^4	12M	2	1,2
		OR			

5.		Reduce the quadratic form $3x^2+5y^2+3z^2-2xy-2yz+2zx$ to the normal form by orthogonal transformation	12M	2	1,2

UNIT–III

6.	a)	If $u = x^2 - 2y, v = x + y + z, w = x - 2y + 3z$ *then* $\frac{\partial(u,v,w)}{\partial(x,y,z)}$	6M	3	1,2
	b)	Find the maximum and minimum values of $f(x,y) = x^3 + y^3 - 3axy$	6M	3	1,2

OR

7.		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.	12M	3	1,2

UNIT–IV

8.	a)	Evaluate $\int_0^a \int_0^{\sqrt{a^2-y^2}} \sqrt{a^2-x^2-y^2}\, dx.dy$	6M	4	1,2
	b)	Evaluate $\int_0^{\pi/4} \int_0^{a\sin\theta} \frac{r}{\sqrt{a^2 - r^2}}\, dr\, d\theta$	6M	4	1,2

OR

9.		Change the order of integration and evaluate $\int_0^1 \int_{x^2}^{2-x} x\, y\, dx.dy$	12M	4	1,2

UNIT–V

10.	a)	Evaluate $\int_0^\infty e^{-2x}.\, x^{5/2} dx$ ii) Show that $\int_0^\infty x^4 e^{-x^2} dx = \frac{3\sqrt{\pi}}{8}$	6M	5	1,2
	b)	State and prove Relation between Beta and Gamma functions	6M	5	1,2

OR

11.	a)	Evaluate $\int_0^\infty \frac{x^2}{\sqrt{1-x^5}} dx$ in terms of function	6M	5	1,2
	b)	Show that $\int_0^{\frac{\pi}{2}} \sin^{2\alpha}\theta \cos^{4\alpha}\theta\, d\theta = \frac{\pi}{32}$	6M	5	1,2

*** End ***