

**GANDHI INSTITUTE FOR TECHNOLOGY (GIFT)**  
**(An Autonomous Institution)**

Registration No.:

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B.Tech.

Total Number of Pages:02

Sub Code:BTBS-T-HS-101

**1<sup>st</sup> Semester End Semester Examination:2022-23**

**Communicative English-I**

**Branch(s): AGE, Civil, CSE, CSE (AI), CSE (IOT), EEE, ECE, MECH**

**Time: 3 Hours**

**Max Marks:100**

**Q. Code: H101**

*Answer question No. 1 (Part I) which is compulsory, any eight from Part II and any two from Part-III  
The figures in the right hand margin indicate marks*

Part - I		Marks	CO
<b>01</b>	<b>Answer the following Questions</b>		
a)	Define "code" in the process of communication.	2	1
b)	Find out the syllabic structure of: COSMOPOLITAN	2	5
c)	Write the full form of IPA	2	1
d)	What is the type of Listening for the sentence? "Students are listening to the teacher sincerely".	2	2
e)	There are ----- short vowels and ----- long vowels sound in English.	2	3
f)	Write any two forms of Written Communication.	2	3
g)	Write the process of reading.	2	2
h)	Rewrite the following transcriptions as per their English spelling /tʃə:tʃ/, /æŋgri/	2	4
i)	Any unplanned interference in communication process which causes hinderance in transmission of message is considered as	2	5
j)	Which of the word below contains the sound that is represented by the IPA symbol /j/ Yes, fly, boy, new	2	4

**Part - II**

<b>02</b>	<b>Short answer type Questions (Answer any Eight out of Twelve)</b>	<b>Marks</b>	<b>CO</b>
a)	Communication is a cyclic process. Justify.	6	1
b)	State the difference between Empathetic Listening and Appreciative Listening with examples.	6	1
c)	What are the different types of listening that we use in our day-to-day life?	6	2
d)	Transcribe the following words: <i>college, politics, television</i>	6	3
e)	A good paragraph is developed by using various techniques. Explain.	6	3

	<input checked="" type="checkbox"/> f) What is brain storming and idea mapping.	6	3
	<input checked="" type="checkbox"/> g) What are the barriers to listening?	6	3
	<input checked="" type="checkbox"/> h) Write any four factors which are responsible for Communication.	6	3
	<input checked="" type="checkbox"/> i) What is concord. Explain it in details with example.	6	4
	<input checked="" type="checkbox"/> j) What is a Syllable? Write three words having three syllables and two words having two syllables.	6	4
	<input checked="" type="checkbox"/> k) Minute is important for an effective meeting. Elucidate	6	3
	<input checked="" type="checkbox"/> l) How to write an agenda?	6	5

### Part - III

Long Answer type Questions (Answer any two out of four)			Marks	CO
03	<input checked="" type="checkbox"/> a) Explain the importance of communication in English Language for the technocrats.		8	1
	<input checked="" type="checkbox"/> b) What is Feedback? Explain the relevance of feedback in effective communication.		8	1
04	<input checked="" type="checkbox"/> a) You ordered for 100 pairs of sports shoes with Daniel Distributors, phase 1, main market Kolkata. The delivery date has already expired 10 days and you received no response to your enquiry about the delay. You are a retail shop owner. Draft a letter of cancellation of the order.		8	3
	<input checked="" type="checkbox"/> b) Write a letter to the MD of a company for submission of quotation for supplying 40units of A/Cs which will be installed in your new office.		8	4
05	<input checked="" type="checkbox"/> a) Communication is a dynamic Process. Explain with the help of a suitable diagram.		8	3
	<input checked="" type="checkbox"/> b) State different types of barriers to communication.		8	4
06	<input checked="" type="checkbox"/> a) <b>Paraphrase the following:</b> Global warming is a major climate issue of the twenty-first century, excess burning of fossil fuels through industries, power plants, and transports are the main culprits of the crisis. Global warming has led to the rise in the overall temperature of the earth, and it can have disastrous effects on the different organisms living on the earth. The impact of global warming causes several climate issues like raising the water levels on the sea, leading to the shrinking of the mainland, although most of the side effects are widespread and unspecific. Global warming can be checked by restoring greenery and vegetation, and by use of clean energy fuels.		8	5
	<input checked="" type="checkbox"/> b) <b>Draft a notice with appropriate agenda and minutes of the following:</b> XYZ Company, Gurgaon, Haryana plans to setup its regional office in Odisha. A meeting of the Board of Directors will be convened to discuss on the issue.		8	5

NB : CO – Course Outcome

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B.Tech.

Total Number of Pages: 02

Sub Code: BTBS-T-SC-101

**1st Semester End Semester Examination: 2022-23**

**SEPD (Skill Enhancement and Personality Development)**

**Branch(s): AGE, Civil, CSE, CSE (AI), CSE (IOT), EEE, ECE, MECH**

**Time: 3 Hours**

**Max Marks: 100**

**Q. Code: S101**

*Answer question No. 1 (Part I) which is compulsory, any eight from Part II and any two from Part-III*

*The figures in the right hand margin indicate marks*

<b>Part - I</b>		<b>Marks</b>	<b>CO</b>
<b>01</b>	<b>Answer the following Questions</b>		
	a) What is an MTI ?	2	1
	b) How to overcome influence of MTI ?	2	1
	c) How many Types of Verbs and mention what are they?	2	1
	d) Write each 2 examples of Regular & Irregular Verbs.	2	1
	e) What are the 4 common forms of all 3 Tenses ?	2	1
	f) Write 2 sentences with HE and SHE [pronouns] in Simple Present Tense.	2	1
	g) Write 2 sentences in Future Perfect Tense and 2 sentences in Past Perfect Tense.	2	1
	h) How many Personal Pronouns are there? What are they?	2	2
	i) Mention, four Future Tense Time Indicators [ 4 time indicators of future tense]	2	2
	j) Mention, four Past Tense Time Indicators [ 4 time indicators of past tense]	2	2
<b>Part - II</b>			
<b>02</b>	<b>Short answer type Questions (Answer any Eight out of Twelve)</b>	<b>Marks</b>	<b>CO</b>
	a) Mention the Basic Soft skills for Job Seekers.	6	1
	b) Define Sense of Maturity? Mention the factors or efforts that influence 'Sense of Maturity'.	6	1
	c) What is Introspection? How do you evaluate yourself [ by Nature] ?	6	2

	d) Mention the factors that affect Presentation Skill.	6	1
	e) Mention a few tips to improve “English Speaking Skills”	6	1
	f) What are Phrasal Verbs? Mention any four of them with examples in sentences.	6	1
	g) Write about “GIFT College” in not less than 10 sentences.	6	1
	h) Who is Your Role Model [Person]? Write a few Sentences about your role model.	6	1
	i) Define Corporate Etiquette & Self- Grooming.	6	2
	j) Write Names of six Corporate Companies.	6	2
	k) What is personality? Mention the qualities & characteristics to develop one’s personality.	6	1
	l) Explain briefly about your career ( future) planning.	6	2

### Part – III

	Long Answer type Questions (Answer any two out of four)	Marks	CO
03	Write a formal letter to a Shopkeeper (Book seller), enquiring for a book on “English Grammar”.  Name of the shop: A to Z Academics: no3/85, Bhubaneswar.  Name of the manager: Sujith Misra	16	1
04	What is Communication? How many types of communication are there? Explain.	16	1
05	Define Soft skills and mention the list of Soft skills..	16	2
06	What is Presentation Skill? Explain the factors that influence effective communication..	16	2

NB : CO – Course Outcome

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B.Tech.

Total Number of Pages: 02

Sub Code: BTBS-T-BS-103

**1st Semester End Semester Examination: 2022-23**

**Applied Chemistry**

**Branch(s): AGE, Civil, CSE, CSE (AI), CSE (IOT), EEE, ECE, MECH**

**Time: 3 Hours**

**Max Marks: 100**

**Q. Code: B103**

*Answer question No. 1 (Part I) which is compulsory, any eight from Part II and any two from Part-III  
 The figures in the right hand margin indicate marks*

<b>Part - I</b>			
<b>01</b>	<b>Answer the following Questions</b>	<b>Marks</b>	<b>CO</b>
a)	Write Schrodinger's three dimensional wave equation.	2	1
b)	Define Eigen function and Eigen Values.	2	1
c)	What is bottom up approach?	2	1
d)	Define Octane rating.	2	2
e)	Define water line corrosion.	2	3
f)	Write the advantages of Teflon over PE.	2	3
g)	What are the constituents present in CNG?	2	2
h)	Define component of a system.	2	4
i)	Define dry cell with examples	2	5
j)	What is the role of TEL in IC engine?	2	4
<b>Part - II</b>			
<b>02</b>	<b>Short answer type Questions (Answer any Eight out of Twelve)</b>	<b>Marks</b>	<b>CO</b>
a)	Write the postulates of Photoelectric effect and define the term work Function.	6	1
b)	State & explain Schrodinger's wave equation and write its significance.	6	1
c)	Explain the phase diagram of water system.	6	2
d)	State and explain about the Lead -acid battery.	6	3
e)	Write short notes on Fuel Cell.	6	3
f)	Discuss caustic embrittlement corrosion.	6	3
g)	Calculate the GCV and NCV of a coal having the composition C=80%, H=10%, S=2%, O = 5% N=3% .Lf of steam=587 Cal/g.	6	3
h)	Write the preparation, properties and application of Nylon-6.	6	3
i)	Differentiate between Top-Down and Bottom-up approach	6	4
j)	Give differences between sacrificial anodic protection and impressed current cathodic protection.	6	4
k)	Write short notes on Pitting and Stress corrosion.	6	3
l)	Write notes on Ni-Cd battery. Why such cell are banned for use.	6	4

Part – III			
	Long Answer type Questions (Answer any two out of four)	Marks	CO
03	a) Mathematically explain the particle possess some finite amount of energy at ground state.	8	1
	b) State Gibbs phase rule and explain the terms involved in it.	8	1
04	a) Discuss various factors affecting corrosion.	8	1
	b) What is Dry Cell? With the help of diagram, explain working of Zn-Carbon cell.	8	2
05	a) Explain refining of crude oil with diagram.	8	3
	b) Give a comparative study of thermosetting and thermoplastic polymers with example.	8	4
06	a) Explain the application of Nano materials in the field of electrical and electronics.	8	5
	b) Write short note on classification of Nano materials.	8	5

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B.Tech.

Total Number of Pages: 03

Sub Code: BTBS-T-BS-101

**1<sup>st</sup> Semester End Semester Examination: 2022-23**

**Introduction to Mathematics - I**

**Branch(s): AGE, Civil, CSE, CSE (AI), CSE (IOT), EEE, ECE, MECH**

**Time: 3 Hours**

**Max Marks: 100**

**Q. Code: B101**

*Answer question No. 1 (Part I) which is compulsory, any eight from Part II and any two from Part-III  
 The figures in the right hand margin indicate marks*

**Part - I**

01	Answer the following Questions	Marks	CO
a)	What is the order & degree of the differential equation $\frac{d^3y}{dx^3} - \frac{3e^x}{\sqrt[3]{\frac{d^3y}{dx^3}}} = 0$	2	2
b)	Solve, $\sin^{-1} \frac{dy}{dx} = x + y$ .	2	2
c)	Form a differential equation for a circuit with emf $E = 15V$ , resistance $R = 5\Omega$ and $L = 0.5 H$ .	2	2
d)	Verify the linear dependence or independence of the following set of vectors: $(1,0,1), (1,1,-1), (-1,1,-3)$	2	3
e)	Find the spectrum and spectral radius of the matrix $= \begin{bmatrix} -5 & 2 \\ 2 & -2 \end{bmatrix}$	2	4
f)	Find the unit vector perpendicular to both $\vec{a} = 3\hat{i} - 2\hat{j}$ and $\vec{b} = \hat{i} - 2\hat{j} + \hat{k}$ ?	2	6
g)	Determine the critical points and locate any relative minima, maxima and saddle points of function $f$ defined by $f(x, y) = 2x^2 + 2xy + 2y^2 - 6x$	2	6
h)	The velocity $\vec{v}$ of a fluid motion is given by $\vec{v} = [2y^2, 0, 0]$ , find whether the flow of the fluid is (i) Rotational, (ii) Incompressible	2	6
i)	If order of a matrix $A$ is $101 \times 110$ and its rank is 91, then find how many linearly dependent rows.	2	5
j)	If $ A + 2I  = 0$ , trace of the matrix $A$ is 6 and determinate of the matrix $A$ is -30. Find all Eigen value the matrix.	2	5

### Part - II

02	Short answer type Questions (Answer any Eight out of Twelve)	Marks	CO
a)	Solve the ODE, $\frac{dy}{dx} = 1 + x + y + xy$	6	2
b)	Solve the ODE $y' - \frac{2y}{x} = x^2 y^3$ , $y(1) = 1$	6	2
c)	Using method of reduction of order, solve $(1-x^2)y'' - 2xy' + 2y = 0$ , $y_1 = x$ .	6	2
d)	Using method of variation of parameter solve, $x^2 y'' - 4xy' + 6y = 21x^4$ .	6	2
e)	Using method of undetermined coefficient, solve $3y'' + 10y' + 3y = 9x + 5\cos x$ .	6	2
f)	If $A = \begin{pmatrix} 1 & -1 & 3 \\ 2 & 5 & -2 \\ -3 & 4 & 8 \end{pmatrix}$ find the matrix $A^2 - 3A + 5I$ .	6	4
g)	Reduce the matrix $A = \begin{pmatrix} -6 & -6 & 10 \\ -5 & -5 & 5 \\ -9 & -9 & 13 \end{pmatrix}$ in to diagonal form.	6	4
h)	If all Eigen values of a square matrix are distinct, then show that all Eigen vector are linearly independent.	6	5
i)	What is the conic section of the following quadratic form? $7x_1^2 + 6x_1x_2 + 24x_2^2 = 156$	6	5
j)	Find the directional derivative of the function $\varphi(x, y, z) = x^2 + y^2 - 2z^2$ at the point $(2, -2, 2)$ in the direction of the vector $(2\hat{i} - 4\hat{j} - 4\hat{k})$	6	6
k)	Find the unit normal vector at $(2, 2, 3)$ to the surface $x^2 + y^2 + 2z^2 = 26$	6	6
l)	Find $\operatorname{div}\vec{F}$ and $\operatorname{curl}\vec{F}$ at the point $P(1, 2, 3)$ if $\vec{F} = x^2yz\hat{i} + xy^2z\hat{j} + xyz^2\hat{k}$	6	6

### Part - III

03	Long Answer type Questions (Answer any two out of four)	Marks	CO
a)	Solve the ODE, $y'' + 2y' + 2y = 2e^{-2x}(5x - 6)$	8	2
b)	Find transient current of an electrical circuit with $R = 10$ ohms, $L = 0.5$ henry, $C = 0.05$ Farad and $E = 10 \sin 3t$ .	8	3

4	a)	Find the inverse of the matrix $A = \begin{pmatrix} 2 & -1 & 4 \\ 3 & 2 & 5 \\ 5 & 8 & 11 \end{pmatrix}$ .	8	4
	b)	For which value of $\mu$ , our systems of equations having infinite number of solutions. $2x - y + 3z = 3, 3x + y + 3z = 1 \text{ & } 4x + 3y + \mu z = 14$	8	4
5	a)	Using Gauss Elimination solve the following system of Linear equations. $3x_1 + 2x_2 + x_3 = 3$ $2x_1 + x_2 + x_3 = 0$ $6x_1 + 2x_2 + 4x_3 = 6$	8	4
	b)	Find the Rank of the Matrix $\begin{bmatrix} 3 & 0 & 2 & 2 \\ -6 & 42 & 24 & 54 \\ 21 & -21 & 0 & -15 \end{bmatrix}$	8	5
6	a)	Prove that $\operatorname{div}(\vec{u} \times \vec{v}) = \vec{v} \cdot \operatorname{curl} \vec{u} - \vec{u} \cdot \operatorname{curl} \vec{v}$	8	6
	b)	Find the maximum/ minimum values of the function $f(x, y) = x^3 + 3xy^2 - 15x^2 - 15y^2 + 72x$	8	6

N:B.- CO- Course Outcome

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B.Tech.

Total Number of Pages: 02

Sub Code: BTBS-T-ES-103

**1st Semester End Semester Examination: 2022-23**

**Basic Programming Skills**

**Branch(s): AGE, Civil, CSE, CSE (AI), CSE (IOT), EEE, ECE, MECH**

**Time: 3 Hours**

**Max Marks:100**

**Q. Code: E103**

*Answer question No. I (Part I) which is compulsory, any eight from Part II and any two from Part-III*

*The figures in the right hand margin indicate marks*

Part - I		Marks	CO
01	Answer the following Questions		
a)	What are basic data types associated with C programming?	2	1
b)	Write the output of the following code: <pre>#include&lt;stdio.h&gt; int main() {     int n;     for(n = 7; n!=0; n--)         printf("n = %d", n);     getchar();     return 0; }</pre>	2	1
c)	Find The Output For Following Code. <pre>#include&lt;stdio.h&gt; #include&lt;conio.h&gt; void main() {     int i;     for(i=1;i&lt;10;i++)     {         printf("%d",i);         if(i==7)             continue;     } }</pre>	2	2
d)	Write differences between looping and branching? What types of loops are supported in C?	2	3
e)	Differentiate between malloc() and calloc()	2	3
f)	What is a recursive function? How it is different from iteration?	2	4
g)	Find Output. <pre>void main() {     int a[]={1,2,3,4,5}.*p;     p=a;     ++*p;</pre>	2	4

	<pre> printf("%d", *p); p+=2; printf("%d", *p); } </pre> <p> <input checked="" type="checkbox"/> h) Define a structure to store name, roll and cgpa of a student. Declare and initialize a variable of this structure type.  <input checked="" type="checkbox"/> i) How a union is different from a structure?  <input checked="" type="checkbox"/> j) What are the different modes of opening a text file?     </p>		
<b>Part - II</b>			
02	<b>Short answer type Questions (Answer any Eight out of Twelve)</b>	<b>Marks</b>	<b>CO</b>
	a) What is the conditional operator in C programming? Write a program to input two numbers and print the greater number using conditional operator.	6	2
	b) Explain the uses of break and continue with a suitable example.	6	3
	c) Write a C program to check whether a string is palindrome or not.	6	5
	d) Write a C program to print all the integers in the range 1-100, except those divisible by 5.	6	3
	e) Write a program to find out the prime numbers in between 10 and 1000.	6	3
	f) Write a program that swaps the values of two variables using a function.	6	4
	g) Write a program that checks whether an integer is an Armstrong number or not by defining a function for it. An Armstrong number is a number that is equal to sum cubes of its digits. E.g 153	6	4
	h) Write a program to find the factorial of a given number using a recursive function.	6	4
	i) Write a program that takes a matrix as input and prints the transpose of that matrix.	6	5
	j) What is the general form (syntax) of function definition in C programming? Define a function to print "Good Morning".	6	4
	k) What is the similarity and dissimilarity between a Structure, Union and enumeration?	6	4
	l) Write a program to copy the contents of one file into another file.	6	6
<b>Part - III</b>			
<b>Long Answer type Questions (Answer any two out of four)</b>		<b>Marks</b>	<b>CO</b>
03	a) Write a program to input three numbers and print the smallest integer.	8	2
	b) Write the syntax for all types of loops that are supported in C and explain them.	8	2
04	a) Write a program to sort an array of 10 integers using bubble sort algorithm.	8	6
	b) Write a program to store 10 integers in an array and print the highest, smallest and sum of all integers.	8	5
05	a) Write a program that defines an array of structure to store roll number, name and cgpa of five students and print them.	8	5
	b) Write a program that prints the first N numbers in the Fibonacci series using a recursive function.	8	5
06	Write short notes on: a. Self Referential structure b. Dynamic Memory Allocation c. Function Prototype d. Storage Class	8	2

NB : CO - Course Outcome