

Registration Number

--	--	--	--	--	--	--	--

INDIAN INSTITUTE OF HANDLOOM TECHNOLOGY

Bargarh/Fulia/Guwahati/Jodhpur/Salem/Varanasi/Champa/Kannur/KHTI-Gadag/SPKM-Venkatagiri/KLB-IIHT-Hyderabad

Diploma in Handloom & Textile Technology

NOV/DEC-2025 SEMESTER EXAMINATION

(Regulation-2025)

Semester : I

Time:3 Hours

Course Code & Title : **25BS105 Applied Chemistry**

Maximum Marks: 100

PART-A

(10×2=20 Marks)

Answer all the questions within two to three sentences

1. Define Quantum number. What are the four types of quantum number.
2. What are the disadvantage of using hard water in boiler?
3. What is the equivalent weight of acid and base? Write a suitable formula.
4. State the chemical properties of Sulphuric acid.
5. Define oxidation and reduction reaction with suitable example.
6. What is binder? Write any three uses of binders.
7. What is isomerism and their types?
8. Define polymer and monomer. Give a example.
9. What is limiting reagent.
10. What is reversible and irreversible with an example?

PART-B

((6+10)×5=80 Marks)

Answer all the questions in detail

11. A. Explain the Bohr's model. What are the limitations of Bohr's model of hydrogen atoms. (6)
B. Describe the Zeolite process for water treatment. Write their advantage and disadvantage of Zeolite process. (10)

(OR)

- C. Describe the shapes of sp, sp², and sp³ hybridization. (6)
D. Explain the Demineralization of water by Ion exchange process. How are the exhausted cation and anion exchange resins regeneration. (10)

12. A. Explain the Neutralization reaction explain with a suitable example. (6)
B. What is the Arrhenius and Lewis concept of acid and bases? Give a suitable example. (10)

(OR)

- C. Write about the concept of strong acid and weak acids and strong Base and weak Base with example. (6)
D. Write about the physical and chemical properties of Hydrochloric acid and Sodium hydroxide. (10)
13. A. Write the applications of electroplating. (6)
B. Explain the ion electron method of balancing equations? (10)

(OR)

- C. Write the any four applications of Bleaching powder and Hydrogen Peroxide. (6)
D. What is lead storage battery? Explain the construction and functioning of Lead acid battery. (10)
14. A. What is isomerism and explain its types? (6)
B. What are the basic rules for IUPAC naming of organic compound? (10)

(OR)

- C. Explain the preparation and properties of Benzene. (6)
D. Write the preparation and uses of Nylon 6:6 and PVC. (10)
15. A. What are the 5 factors that affect the rate of reaction? (6)
B. What is the difference between a crystalline solid and an amorphous solid? (10)

(OR)

- C. Define catalyst. Explain the various types of catalyst with suitable example. (6)
D. Explain the industrial preparation of ammonia by Haber's process. (10)

Registration Number

--	--	--	--	--	--	--	--

INDIAN INSTITUTE OF HANDLOOM TECHNOLOGY

Bargarh/Fulia/Guwahati/Jodhpur/Salem/Varanasi/Champa/Kannur/KHTI-Gadag/SPKM-Venkatagiri/KLB-IIHT-Hyderabad

Diploma in Handloom & Textile Technology

NOV/DEC-2025 SEMESTER EXAMINATION

(Regulation-2025)

Semester : I

Time:3 Hours

Course Code & Title : **25BS101 Mathematics - I**

Maximum Marks: 100

PART-A

(10×2=20 Marks)

Answer all the questions within two to three sentences

1. If $A = 45^\circ$ and $B = 30^\circ$ find $\tan(A+B)$?
2. Convert $\pi/3$ radians into degrees.
3. Identify the real and imaginary parts of $z = 7 - 4i$.
4. Multiply: $(2 + i)(3 - 4i)$.
5. Check the continuity of $f(x) = x^2 - 3x + 2$ at $x=1$.
6. Differentiate $\frac{d}{dx}(\sin x + e^x)$.
7. Find the value of: 7P_3
8. A box has 6 red and 4 blue balls. In how many ways can 3 balls be selected?
9. State the axioms of probability.
10. Find the median of the data: 5, 9, 2, 7, 1.

PART-B

((6+10)×5=80 Marks)

Answer all the questions in detail

11. A. Prove that: $\frac{\sin 2A}{1 + \cos 2A} = \tan A$ (6)
B. In a right- angled triangle, one side is 5 cm, the hypotenuse is 10 cm. find the other side using Pythagoras theorem and also $\sin \theta$, $\cos \theta$, $\tan \theta$. (10)
(OR)
C. If $\sin A = 3/5$. Find $\cos A$ and $\tan A$. (6)
D. Prove that $\cos 2A = 1 - 2 \sin^2 A$. Then evaluate $\cos 120^\circ$. (10)
12. A. Express $1 + \sqrt{3}i$ in polar form. (6)
B. If $Z_1 = 1 + i$ and $Z_2 = 1 - i$, find $Z_1 Z_2$. (10)
(OR)
C. Find the conjugate, modulus and amplitude of $z = 1 - \sqrt{3}i$. (6)
D. Simplify: $\frac{7+4i}{3-2i}$ (10)
13. A. $\lim_{x \rightarrow 0} \frac{1 - \cos x}{x^2}$ (6)

B. Find $\frac{dy}{dx} = \frac{x^2+1}{x}$ (10)

(OR)

C. Differentiate $y = x^2 e^x$ (6)

D. Let $f(x) = \begin{cases} x^2 & ; \quad x \leq 1 \\ 2x - 1 & ; \quad x > 1 \end{cases}$ check (a) continuity at $x = 1$, (b) differentiability at $x = 1$. (10)

14. A. Expand $(x + y)^5$. (6)

B. A committee of 2 boys and 2 girls is to be formed from 5 boys and 4 girls. How many ways can this be done? (10)

(OR)

C. Evaluate $(1.02)^6$ using binomial expansion. (6)

D. Find the value of: 7P_3 and ${}^{10}C_4$. (10)

15. A. Events A and B are independent with $P(A) = 0.4$, $P(B) = 0.5$. Find (6)

1. $P(A \cap B)$

2. $P(A \text{ or } B)$.

B. For the discrete data: (10)

x	1	2	3	4	5
f	2	4	5	3	1

Find mean, median, mode.

(OR)

C. A die is rolled. Let A = 'even number', B = 'number greater than 3' Find (6)

a) $P(A \cap B)$

b) $P(A \cup B)$

c) $P(\text{not } A)$

D. Find arithmetic mean from the grouped data: (10)

Class Interval	Frequency
0 – 10	5
10 – 20	8
20 – 30	12
30 – 40	5

Registration Number

--	--	--	--	--	--	--	--

INDIAN INSTITUTE OF HANDLOOM TECHNOLOGY

Bargarh/Fulia/Guwahati/Jodhpur/Salem/Varanasi/Champa/Kannur/KHTI-Gadag/SPKM-Venkatagiri/KLB-IIHT-Hyderabad

Diploma in Handloom & Textile Technology

NOV/DEC-2025 SEMESTER EXAMINATION

(Regulation-2025)

Semester : I

Time:3 Hours

Course Code & Title : **25HS101 Communication Skills in English**

Maximum Marks:100

PART-A(10×2=20 Marks)

Answer all the questions within two to three sentences

1. Define Communication.
2. What do you mean by Feedback?
3. What is Soft Skill?
4. Explain 'Self- Awareness' as an important life skill.
5. Who is the writer of the story 'Engine Trouble'?
6. Identify the following lines and name the poem from which these lines have been taken:

*The woods are lovely, dark and deep,
But I have promises to keep,
And miles to go before I sleep,
And miles to go before I sleep.*

7. What is formal letter?
8. Write any one advantage of e-mail writing.
9. **Fill in the blanks with appropriate article:**
 - a) Sheldon is honest man. (a/an/the)
 - b) Charles Babbage is known as father of computer. (a/an/the)
10. **Identify the preposition in the following sentences:**
 - a) He was preparing for his examination.
 - b) I went to a lovely Christmas party.

PART-B((6+10)×5=80 Marks)

Answer all the questions in detail

11. A. Explain the process of communication. (6)
- B. Describe formal and informal types of communication with examples. (10)
- (OR)
- C. Elaborate 7 Cs for effective communication. (6)
- D. What are the different barriers to effective communication? Explain. (10)

12. A. Differentiate between soft skill and hard skill. (6)
- B. Write a short note on following life skills: (10)
- a) Self-Analysis
 - b) Time Management

(OR)

- C. Explain the importance of soft skills. (6)
- D. Describe 'Leadership' and 'Emotional Intelligence' as important life skills. (10)

13. A. Read the passage carefully and answer the following questions: (6)

Binya belonged to the mountains, to this part of the Himalayas known as Garhwal. Dark forests and lonely hilltops held no terrors for her. It was only when she was in the market-town, jostled by the crowds in the bazaar, that she felt rather nervous and lost. The town, five miles from the village, was also a pleasure resort for tourists from all over India.

Binya was probably ten. She may have been nine or even eleven, she couldn't be sure because no one in the village kept birthdays; but her mother told her she'd been born during a winter when the snow had come up to the windows, and that was just over ten years ago, wasn't it?

- i. Write the name of the story from which the above lines have been taken.
- ii. How old Binya was?
- iii. What is the meaning of 'hilltops' in the above paragraph

- B. (10)

I watched the flame feeding on my mother.

I watched the holy man perform his rites to tame the poison with an incantation. After twenty hours it lost its sting.

- i. Write the name of the poem from which the above lines have been taken.
- ii. Who is 'I' in the above passage?
- iii. After how many hours did the bite lost its sting?
- iv. Who is the poet of the above lines?
- v. Who is 'holy man' in the above lines?

(OR)

- C. (6)
- Shall I compare thee to a summer's day?
Thou art more lovely and more temperate:
Rough winds do shake the darling buds of May,
And summer's lease hath all too short a date;*

- i. Write the name of the poem from which the above lines have been taken.
- ii. Explain in your own words what 'more temperate' means?
- iii. What does the word 'lease' suggest in the context of the summer?

D. Read the passage carefully and answer the questions that follow:- (10)

R.K. Narayan is one of the most widely read and appreciated Indian writers of the 20th century. His creation of the fictitious town of Malgudi and the adorable prankster Swami has earned him many accolades. His stories hold up a mirror to his readers. R.K. Narayan was born on 10 October, 1906 in Madras (now Chennai). His father was a school teacher and his initial years were spent with his grandmother. He studied Tamil and English during the early years of his schooling and later moved to Mysore (now Mysuru) with his parents. He graduated from Maharaja College of Mysore.

As a writer R.K.Narayan started his literary career with the publication of short stories in the newspaper, *The Hindu*. His first novel was *Swami and Friends* which won the approval and patronage of another celebrated author, Graham Greene, who got it published. A succession of novels and stories followed in the wake of the success of Narayan's first novel. The most important of R.K. Narayan's novels are *The Bachelor of Arts*, *The Financial Expert*, *The Guide*, which was made into a blockbuster Hindi movie, *The Man-Eater of Malgudi* and *The Talkative Man*. The most famous collection of his stories include *Malgudi days*, *An Astrologer's Day and other Stories*, *Under the Banyan Tree and other Stories* and *Grandmother's Tale and Selected Stories*. R.K.Narayan received the Sahitya Akademi Award in 1958, the Padma Bhushan in 1964 and the Padma Vibhushan in 2000. He passed away on 13 May 2001.

- i. When and where R.K. Narayan was born?
- ii. From where R.K.Narayan did his schooling?
- iii. Which was R.K.Narayan's first novel?
- iv. Name the awards that were given to Narayan for his literary achievements.
- v. Where did R.K.Narayan died?

14. A. Read the passage given below and summarize it by giving appropriate title: (6)

Everybody knows what a "good" man means and how he should be. Our definition of a good man is the one who does not smoke or drink or avoids the usage of bad language. A good man is ideally expected to converse in front of men as he would in front of women. He is also expected to attend the Church regularly and have correct opinions on all subjects. He has a wholesome horror of wrong-doing and realizes that it is our painful duty to

reprimand sin. He is not anticipated to have wrong thinking and has the authority to protect the young. His duties are not just restricted to the professional front but also needs to spend quality time doing good deeds.

- B. Write a letter to a sports firm for ordering sports items. (10)**

(OR)

- C. Write an email to your brother congratulating him on securing good marks in board examination. (6)**

- D. Write a letter to your friend asking him to visit your place during summer vacation. (10)**

- 15. A. Identify the type of tenses in the following sentences: (6)**

- i. The police caught the thief.
- ii. The man was riding a white horse.
- iii. I am living in Varanasi since 1990.

- B. Change the following sentences into their negative forms:- (10)**

- i. She speaks Hindi.
- ii. I saw a dog in the street.
- iii. She has written an article.
- iv. Radha danced well.
- v. Mohan plays cricket.

(OR)

- C. Change into indirect speech: (6)**

- i. Mina said, "I have been writing this letter."
- ii. I said, "Shivam is driving the car."
- iii. Rubina said, "It is very cold outside."

- D. Convert the following sentences into Passive Voice:- (10)**

- i. Shershah Suri defeated Humayun.
- ii. She is cooking food.
- iii. They will write a letter.
- iv. My sister painted that picture.
- v. The teacher beat the mischievous boys.
