

Registration Number

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INDIAN INSTITUTE OF HANDLOOM TECHNOLOGY

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

Diploma in Handloom & Textile Technology

NOV/DEC-2024 SEMESTER EXAMINATION

(Regulation-2021)

Semester : 01

Time:3 Hours

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

Maximum Marks:100

PART-A (10×2=20 Marks)

Answer all the questions within two to three sentences

1. Mention the types of Communication.
2. Name the 7Cs for effective communication.
3. Mention the soft skills necessary for students.
4. What is self analysis?
5. Mention any one difference between Business letter and Personal letter.
6. What are the parts of an email?
7. Who is the author of 'The Gift of Magi'?
8. **Identify the following lines and name the poem from which these lines have been taken:-**

Where the mind is without fear and the head is held high

Where knowledge is free

Where the world has not been broken up into fragments

By narrow domestic walls.

9. **Fill in the blanks with appropriate verb forms:**

a. Cheetahs ___ very fast. (run/ran)

b. The cat ___ the snake. (catch/caught)

10. **Fill in the blanks with suitable prepositions:**

a. Humpty Dumpty sat ___ a wall. (on/at)

b. Mahatma Gandhi was born ___ 2nd October. (on/in)

PART-B ((6+10)×5=80 Marks)

Answer all the questions in detail

11. A. Explain the ways to improve the art of effective communication.

(6)

- B. Explain briefly the barriers of communication. (10)

(OR)

- C. Describe formal and informal communication. (6)

- D. Explore 7Cs of effective communication. (10)

12. A. Write the differences between soft skills and hard skills. (6)

- B. Importance of Soft Skills: Master the Future-Proof Skills for Success - Explain (10)

(OR)

- C. Elaborate: (6)

a. Adaptability b. Emotional intelligence

- D. Team work and Problem solving are essential soft skills - Clarify (10)

13. A. **I remember the night my mother** (6)

was stung by a scorpion. Ten hours

of steady rain had driven him

to crawl beneath a sack of rice.

a. Write the name of the poem from which the above lines are taken.

b. Who is "I" referred to in the given passage?

c. Who was stung by the scorpion?

- B. **Read the passage given below and answer the questions that follow:-** (10)

And then he would took off his coat, and begin. He would send the girl out for six pennies worth of nails, and then one of the boys after her to tell her what size to get. "Now you go and get me my hammer, Will," he would shout, "and you bring me the rule, Tom. I shall want the step- ladder, and I had better have a kitchen-chair, too. And don't you go, Maria, because I shall want somebody to hold me the light. When the girl comes back she must go out again for a bit of picture cord. Tom! - Where's Tom?- Tom, you come here; I shall want you to hand me up the picture."

Answer the following:

(a) The nails cost --- i) five pennies, ii) six pennies, iii) seven pennies.

(b) Before beginning his job, Uncle Podger would ---

i) took off his coat, ii) drink tea, iii) buy some nails.

(c) The girl would go out again to bring ---

- i) a kitchen-chair, ii) some more nails, iii) the picture cords
- (d) Name the children of Uncle Podger.
- (e) Why was everyone tired after Uncle Podger put up the picture on the wall?

(OR)

C. **Whose woods these are I think I know.** (6)

His house is in the village though;

He will not see me stopping here

To watch his woods fill up with snow.

- a. Give the name of the poem from which the above lines are extracted.
- b. What does the word 'woods' refer to?
- c. Who will not see the author stopping there?

D. **Read the given lines below and answer the questions that follow:-** (10)

O. Henry, whose real name was William Sydney Porter, wrote the short story "The Gift of the Magi." It was published in 1910. Below are the opening paragraphs of the story.

One dollar and eighty-seven cents. That was all. And sixty cents of it was in pennies. Pennies saved one and two at a time by bulldozing the grocer and the vegetable man and the butcher until one's cheeks burned with the silent imputation of parsimony that such close dealing implied. Three times Della counted it. One dollar and eighty-seven cents. And the next day would be Christmas. There was clearly nothing to do but flop down on the shabby little couch and howl. So Della did it which instigates the moral reflection that life is made up of sobs, sniffles, and smiles, with sniffles predominating.

- a. Why is Della crying?
- b. How did she get the money?
- c. What do you think "one's cheeks burned with the silent imputation of parsimony" means?
- d. What does O. Henry mean by "with sniffles predominating"?
- e. How much did Della have as her saving?

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

Once there was an Arab who lived in a town. He was a rich man and had many friends. They used to play chess every day in the afternoon. Unluckily,

the Arab did not believe in God. His friends often asked him to give up his disbelief in God. But he did not agree. One day, as the friends were playing chess, it began to rain very heavily. Streets turned into small streams and the roof of the Arab's room began to leak. The Arab got afraid and his hands went up in prayer. From that day on, he became a true believer in God.

- B. Write a letter to your friend congratulating him for receiving 'Best student of the state'. (10)

(OR)

- C. Write an email to your mom as a hosteler expressing your excitement after returning from industrial visit to Mumbai. (6)
- D. Write a letter to the Head of the Department for the permission to participate in a conference. (10)

15. A. **Pick out Nouns in the following sentences:** (6)
- a. Balu has a fine horse.
 - b. Reema is a clever student.
 - c. Kolkata is the capital of West Bengal.

- B. **Change the following sentences into their negative forms:** (10)
- a. He speaks Spanish.
 - b. I work at a hospital.
 - c. They are playing football.
 - d. She gave me an apple.
 - e. We have a resort at Ooty.

(OR)

- C. **Pick out Pronouns in the following sentences:** (6)
- a. I love my country very much.
 - b. We went to meet Rahul's grandmother.
 - c. Please, tell me a story.

- D. **Change the following sentences into passive voice:** (10)
- a. The storm destroyed the house.
 - b. She watered the flowers every day.
 - c. James will repair the car.
 - d. You must pay the bill first.
 - e. Jane is singing the new song.

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Diploma in Handloom & Textile Technology

NOV/DEC-2024 SEMESTER EXAMINATION

(Regulation-2021)

Semester : I

Time:3 Hours

Course Code & Title : **BS101 & MATHEMATICS-I**

Maximum Marks: 100

PART-A

(10×2=20 Marks)

Answer all the questions within two to three sentences

1. Convert 36° to radians.
2. Without using tables, find the value of $\sin 75^\circ$.
3. Evaluate $\lim_{x \rightarrow 2} (x^3 - 2x^2 + 5x + 1)$.
4. Find $\frac{dy}{dx}$ if $y = 7e^x + 4\log x + x^2$.
5. Find the number of ways of arrangement of the letters from the word "PERMUTATION"
6. Find the value of 9C_2 .
7. If two dice rolled, what is the probability that the sum of the upturned faces will be equal to 7?
8. Define discrete random variable.
9. Find the mean of the values 43,49,37,44,45,37,51,46,43,47.
10. Write formula to find the control limits of R-chart.

PART-B

((6+10)×5=80 Marks)

Answer all the questions in detail

11. A. If $\theta = \frac{1}{3}$, find the value of $\cos 3\theta$. (6)
B. If $A + B = 45^\circ$, prove that $(1 + \tan A)(1 + \tan B) = 2$ and hence find the value of $\tan 22\frac{1}{2}^\circ$. (10)

(OR)

- C. Show that $\frac{\sin 2A - \sin 2B}{\cos 2A + \cos 2B} = \tan (A - B)$. (6)
D. Prove that $\cos 10^\circ \cos 30^\circ \cos 50^\circ \cos 70^\circ = \frac{3}{16}$. (10)

12. A. Evaluate $\lim_{x \rightarrow 3} \frac{x^5 - 243}{x^2 - 9}$. (6)

B. Find $\frac{dy}{dx}$ if $y = (2x + 1)(3x - 5)(x^2 - 1)$. (10)

(OR)

C. If $y = \log(\sec x + \tan x)$ find $\frac{dy}{dx}$. (6)

D. Differentiate $y = \frac{x^3 + 3x}{x \cos x}$. (10)

13. A. Find the general term in the expansion of $\left(x + \frac{1}{x}\right)^{10}$. (6)

B. Find the middle term in the expansion of $\left(2x - \frac{x^2}{4}\right)^{16}$. (10)

(OR)

C. Prove that $10_{C_2} + (2 \times 10_{C_3}) + 10_{C_4} = 12_{C_4}$. (6)

D. Find the coefficient of x^{30} in the expansion of $\left(x^4 + \frac{1}{x^6}\right)^{15}$. (10)

14. A. One card is drawn from a pack of 52 cards. What is the probability that either a king or queen? (6)

B. The contents of urns I, II, III are as follows: (10)

Urn \ Balls	White	Black	Red
I	1	2	3
II	2	1	1
III	4	5	3

One urn is chosen at random and two balls are drawn. They happen to be white and red. What is the probability that they come from urn I, II and III?

(OR)

C. If two dice are rolled together then find the probability of getting doublet or sum of faces as 4. (6)

D. There are 3 boxes containing respectively, (10)

1 white, 2 red, 3 black balls; 2 white, 3 red, 1 black balls;

3 white, 1 red, 2 black balls

A box is chosen at random and from it two balls are drawn at random. The two balls are 1 red and 1 white. What is the probability that they come from second box?

15. A. Explain about control chart with type. (6)
- B. Construct a control chart for defectives for the following data: (10)

Sample No:	1	2	3	4	5	6	7	8	9	10
No. of inspected:	90	65	85	70	80	80	70	95	90	75
No. of defectives:	9	7	3	2	9	5	3	9	6	7

(OR)

- C. The data given below are the number of defectives in 10 samples of 100 items each. Construct an np-chart and comment on the results. (6)

Sample No:	1	2	3	4	5	6	7	8	9	10
No. of defectives:	6	16	7	3	8	12	7	11	11	4

- D. Given below are the values of sample mean $\bar{X}$ and sample range R for 10 samples, each of size 5. Draw the appropriate mean and range charts and comment of the state of control of the process. (Given that $A_2 = 0.577$, $D_3 = 0$ and $D_4 = 2.115$) (10)

Sample No:	1	2	3	4	5	6	7	8	9	10
Mean $\bar{X}_i$	43	49	37	44	45	37	51	46	43	47
Range R_i	5	6	5	7	7	4	8	6	4	6

Table : Quality Control - Chart Constants

Sample Size	Chart for average $\bar{X}$ -chart			σ -chart — Chart for Standard Deviations					Chart for Ranges — R-chart				
	Factors for Control Limits			Factors for Central line	Factors for Control Limits				Factors for Central line	Factors for Control Limits			
n	A	A_1	A_2	C_2	B_1	B_2	B_3	B_4	d_2	D_1	D_2	D_3	D_4
2	2.121	3.760	1.880	0.5642	0	1.843	0	3.267	1.128	0	3.686	0	3.262
3	1.732	2.394	1.023	0.7236	0	1.858	0	2.568	1.663	0	4.358	0	2.575
4	1.500	1.880	0.729	0.7979	0	1.808	0	2.266	2.059	0	4.698	0	2.282
5	0.342	1.596	0.577	0.8407	0	1.756	0	2.089	2.326	0	4.918	0	2.115
6	1.225	1.410	0.483	0.8686	0.026	0.711	0.030	1.970	2.534	0	5.078	0	2.004
7	1.134	1.277	0.419	0.8882	0.105	1.672	0.118	1.882	2.704	0.205	5.203	0.076	1.924
8	1.061	1.175	0.373	0.9027	0.167	1.638	0.185	1.815	2.847	0.387	5.307	0.136	1.864
9	1.000	1.094	0.337	0.9139	0.219	1.609	0.239	1.760	2.970	0.546	5.394	0.184	1.816
10	0.949	1.028	0.308	0.9227	0.262	1.584	0.284	1.716	3.078	0.687	5.469	0.223	1.777
11	0.905	0.973	0.285	0.9300	0.299	1.561	0.321	1.679	3.173	0.812	5.534	0.256	1.744
12	0.866	0.925	0.266	0.9359	0.331	1.541	0.354	1.646	3.258	0.924	5.592	0.284	1.716
13	0.832	0.884	0.249	0.9410	0.359	1.523	0.382	1.618	3.336	1.026	5.646	0.308	1.692
14	0.802	0.848	0.235	0.9453	0.384	1.507	0.406	1.594	3.407	1.121	5.693	0.329	1.671
15	0.775	0.816	0.223	0.9490	0.406	1.492	0.428	1.572	3.472	1.207	5.737	0.348	1.652
16	0.750	0.788	0.212	0.9523	0.427	1.478	0.448	1.552	3.532	1.285	5.779	0.364	1.636
17	0.728	0.762	0.203	0.9551	0.445	1.465	0.466	1.534	3.588	1.359	5.817	0.379	1.621
18	0.707	0.738	0.194	0.9576	0.461	1.454	0.482	1.518	3.640	1.426	5.854	0.392	1.608
19	0.688	0.717	0.184	0.9599	0.477	1.443	0.497	1.503	3.689	1.490	5.888	0.404	1.596
20	0.671	0.697	0.110	0.9619	0.491	1.433	0.510	1.490	3.735	1.544	5.922	0.418	1.586

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Diploma in Handloom & Textile Technology

NOV/DEC-2024 SEMESTER EXAMINATION

(Regulation-2021)

Semester : I

Time:3 Hours

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

Maximum Marks: 100

PART-A

(10×2=20 Marks)

Answer all the questions within two to three sentences

1. State Heisenberg's uncertainty principle. Give the mathematical expression of uncertainty principle.
2. Define aqueous and non- aqueous solution. Give a suitable example.
3. What are the units to measure the hardness of water sample?
4. How zeolite bed is regenerated in Permutit process of water softening?
5. Write any four applications of PVC.
6. What are the purposes of alloy making?
7. Define saponification value. Write the significance of saponification value.
8. What are the characteristics of a good fuel?
9. What is oxidation and reduction reaction? Give a suitable reaction.
10. Write any four applications of solar cells.

PART-B

((6+10)×5=80 Marks)

Answer all the questions in detail

11. A. Explain the Principle quantum number and Azimuthal quantum number. (6)
B. Explain the shapes of s, p and d orbitals. (10)
(OR)
C. Write a short note on Bohr's model. Write their limitations. (6)
D. Explain the Rutherford model of atom. What are the conclusion and drawbacks of Rutherford model? (10)
12. A. What are the boiler troubles caused by use of hard water in boiler? How can it be prevented? (6)

- B. Explain the demineralization of water by ion exchange process. How exhausted cations and anions of exchange resins are regenerated? (10)
- (OR)**
- C. What is meant by alkalinity in water? What is its type? Explain it. (6)
- D. Write short notes on Sedimentation, Filtration and Coagulation process. (10)
13. A. Write the Preparation and uses of Nylon 6,6. (6)
- B. Write the short note on General principle of metallurgy. (10)
- (OR)**
- C. Differentiate between Thermoplastics and Thermosetting plastics. (6)
- D. Explain the extraction of Iron from Hematite ore in Blast furnace with neat diagram. (10)
14. A. Write the chemical composition, calorific values & uses of CNG and LPG. (6)
- B. Explain the physical properties of lubricants. (10)
- (OR)**
- C. Define Lubricants. How would you classify lubricants? (6)
- D. Describe the Proximate analysis of coal. Mention its significance (10)
15. A. Differentiate between chemical corrosion and electrochemical corrosion. (6)
- B. What are fuel cells? Explain the construction and working of H_2 - O_2 fuel cells. (10)
- (OR)**
- C. Discuss the factors that affect the rate of corrosion of a metal. (6)
- D. What is Lead storage battery? Explain the construction and functioning of lead acid battery. (10)
