

Bangabandhu Sheikh Mujibur Rahman University, Kishoreganj
1st Year 1st Semester B.Sc. (Engg.) Final Examination-2023
Department of Computer Science and Engineering
CSE 1101: Computer Fundamentals (3 Credits)

Time: 3 Hours

Full Marks: 70

Instructions

- Figures shown in the right margin indicate full marks.
- Answer 5 out of 7 questions.

Question-1

- | | |
|--|---|
| a. Illustrate the major characteristics of the Computer System in detail. | 5 |
| b. Define the Operating System and write down its main functionalities. | 5 |
| c. "Central Processing Unit (CPU) is the brain of a computer System"- analyze the statement with proper reasonings. | 2 |
| d. Explain the data processing activity of a computer with proper diagram. Portray the difference between data and information with appropriate example. | 2 |

Question-2

- | | |
|--|---|
| a. Perform the following operations (show all the necessary steps): | 3 |
| (i) Convert $(1722)_8$ to $(?)_2$ | |
| (ii) Convert $(1111101110)_2$ to $(?)_{16}$ | |
| (iii) Convert $(2DAAD)_{16}$ to $(?)_8$ | |
| b. Perform left logical shift operations and right arithmetic shift operations on the binary number 11110111 by two bits. | 3 |
| c. Perform the following operations (show all the necessary steps): | 4 |
| (i) Subtract $(35)_{10}$ from $(18)_{10}$ using complementary method. | |
| (ii) Divide $(100001)_2$ by $(110)_2$. | |
| d. Write binary coding for the word "BSMRUCSE" in ASCII-8. Calculate the number of bytes required for this representation. | 4 |

Question-3

- | | |
|---|---|
| a. Write down the steps involved in the problem-solving task. | 3 |
| b. Sketch a flowchart to find the highest number among three different numbers entered by the user. | 3 |
| c. Write an algorithm and draw a flowchart to convert the length in feet to centimeters. | 4 |

- d. Mention and discuss different classes (A, B, C, D, and E) of Internet Protocol (IP) address (mentioning the number of network addresses and host address for each class). 4

Question-4

- a. Suppose you are on the webpage of the Xavi Computers, searching for a storage device to upgrade your computer's storage capacity. As you browse through various options, you find a variety of devices with different specifications and features. 5
Given this scenario, what factors would you consider most important when assessing the quality and suitability of a storage device for your computer upgrade? Explain in detail.
- b. Distinguish between fixed word-length memory and variable word-length memory. Highlight their relative advantages and disadvantages. 5
Calculate the number of required bytes to store the following words in a word-addressable computer having a fixed-word-length of 8 bytes (8 characters). Additionally, calculate the number of required bytes to store the words in a character-addressable computer having variable-word-length memory.
(i) METAMORPHOSIS
(ii) CODE
(iii) POLYMORPHISM
- c. Explain why it is advantageous to have more number of bits per word instead of having more words of shorter length in the memory architecture of a computer system. 2
- d. Outline the major functionalities of the system software. Illustrate the primary purposes of different system software like device driver, and utility software in brief. 2

Question-5

- a. Consider a host that has a class-B IPv4 address of 184.56.87.35. Identify the following for the given IP address: 5
(i) Network address
(ii) Broadcast address
(iii) Number of hosts in the network
(iv) IP address of the first valid host of the network
(v) IP address of the last valid host of the network
- b. Differentiate between IP address and MAC address. Explain the necessity of having MAC address in spite of having IP address. 5
- c. Demonstrate the full mesh topology and the partial mesh topology with schematic diagrams. Consider a full mesh topology of 8 nodes. Measure the number of cables needed to construct the network. 2
- d. "In the star topology, failure in one cable will not affect the entire network"- analyze the statement with suitable examples. 2

Question-6

- a. Construct a C-program to determine the numeric value of the century of a given year. 5
Century 1, for example, means the years between 1 and 100, century 2 means the years between 101 and 200, century 3 means the years between 201 and 300 and so on.

The user will input a single integer value that will represent the year. For an input, the output will be the value of the century of the corresponding year.

Sample Input	Sample Output
1	1
999	10
2000	20
2001	21
1997	20

- b. According to a study, the approximate level of intelligence of a person can be calculated using the following formula: 5

$$i = 2 + (y + 0.5x)$$

Write a C-program that will produce a table of values of i , y and x , where y varies from 1 to 6 (The value of y will be incremented by 1 in each iteration). For each value of y , x varies from 5.5 to 12.5 (The value of x will be incremented by 0.5 in each iteration).

Sample Output		
i	y	x
5.75	1	5.50
6.00	1	6.00
6.25	1	6.50
.....		
.....		
14.00	6	12.00
14.25	6	12.50

- c. If the condition for looping is found to be false when the loop is encountered for the first time, how many times will the instructions inside the loop be executed in case of: 2

- (i) while loop
- (ii) do-while loop

Justify your statements.

- d. Identify whether the following variable names are legal or illegal with proper explanations. 2

- (i) MY VAR
- (ii) _Var1
- (iii) float
- (iv) va*r1

Question-7

- a. Identify the differences between *break* statement and *exit()* function in C with proper examples. Determine the outputs of the following program and explain the reasons of such outputs.

```
#include<stdio.h>
int main(){
    int i=3;
    switch(i){
        case 0:
            printf("Case 0\n");
        case 1+2:
            printf("Case 1+2\n");
        case 4/2:
            printf("Case 4/2\n");
        default:
            printf("Default");
    }
    return 0;
}
```

- b. Rewrite the following codes:

(i) Instead of using the *while* loop, use *goto* statement for the following code:

```
#include<stdio.h>
int main(){
    int num=0;
    int digit,sum=456;
    while (num!=0){
        digit=num%10;
        sum=sum+digit;
        num=num/10;
    }
    printf("%d",sum);
    return 0;
}
```

(ii) Instead of using the *if-else* statement, use ternary operator for the following code:

```
#include<stdio.h>
int main(){
    int x=20,y=70,z=45;
    if(x>y && x>z){
        printf("1st condition");
    }
    else if(y>x&&y>z){
        printf("2nd condition");
    }
    else {
        printf("3rd condition");
    }
    return 0;
}
```

- c. Write a C-program to check whether a character entered from the keyboard is an uppercase or a lowercase letter.
- d. Differentiate between *i++* and *++i* with examples. Identify whether there is any error in the following code or not:

```
#include<stdio.h>
int main(){
    int i=0,j=4;
    for(;i<5,j>0;i++,j--){
        printf("%d %d\n",i,j);
    }
    return 0;
}
```

Bangabandhu Sheikh Mujibur Rahman University, Kishoreganj
1st Year 1st Semester B.Sc. (Engg.) Final Examination-2023
Department of Computer Science and Engineering
CSE 1103: Discrete Mathematics (3 Credits)

Time: 3 Hours

Full Marks: 70

Instructions

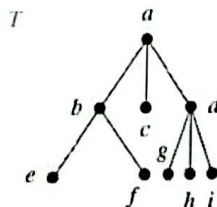
- Figures shown in the right margin indicate full marks.
- Answer 5 out of 7 questions.

Question-1

- a. Is the following argument valid? 5
If you solve every problem in this book, then you will learn propositional logic.
You learned propositional logic.
Therefore, you solved every problem in this book.
- b. Show that the premises "It is not foggy this afternoon and it is not colder than yesterday," "We will go out for a drive only if it is not foggy," "If we do not go out for a drive, then we will have a BBQ in the lawn," and "If we go out for a drive, then we will be home by 10 pm" lead to the conclusion, "We will be home by 10 pm." 5
- c. Explain Tautology, Contradiction, and Contingency with proper examples. 4
Determine whether $(\neg q \wedge (p \rightarrow q)) \rightarrow \neg p$ is a tautology or not.

Question-2

- a. 5

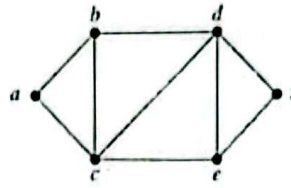


Perform inorder, preorder and postorder traversal on the tree *T* and show the order of vertices visited.

- b. Consider a connected planar simple graph with 16 vertices, each of degree 3. How many regions does a representation of this planar graph split the plane into? 4

c.

5



Use Dijkstra's algorithm to find the shortest path from a to z, where the weights assigned to the edges are as follows: $ab = 5$, $ac = 3$, $bc = 2$, $bd = 6$, $cd = 9$, $ce = 11$, $de = 3$, $dz = 7$, $ez = 3$.

Question-3

- How many different ways are there to seat eight people around a circular table, where two seatings are considered the same when each person has the same left neighbor and the same right neighbor? 4
- A restaurant offers eight different types of toppings for their salad. How many different ways can you choose six toppings for your salad? Assume only the type of topping matters, not the individual toppings or the order in which they are chosen. 4
- How many different strings can be made by reordering the letters of the word PARALLEL? 4
- How many bit strings of length 9 either start with a 1 bit or end with the three bits 000? 2

Question-4

- Explain Generating Functions. Find the answers to the following: 4
 - Generating Function for $1, 3, 5, 7, 9, \dots$
 - Generating Function for $1, 4, 9, 16, \dots$ [Note, we take $1 = a_0$].
- Consider the set $V = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9\}$, and the elements of V are arranged in increasing order. Determine the bit strings representing the subset of prime numbers in V , the subset of composite numbers in V , and the subset of elements less than or equal to 5 in V . 5
- Let f and g be the functions from the set of integers to the set of integers defined by $f(x) = 3x + 1$ and $g(x) = 8x + 3$. What is the composition of f and g ? What is the composition of g and f ? 5

Question-5

- a. A coin is biased so that the probability of heads is $2/3$. What is the probability that exactly seven heads come up when the coin is flipped eleven times, assuming that the flips are independent? 5
- b. In a lottery, players win a large prize when they pick 5 digits that match, in the correct order. The 5 digits are selected by a random mechanical process. A smaller prize is won if only 4 digits are matched. What is the probability that a player wins the large prize? What is the probability that a player wins the small prize? 5
- c. Suppose that one person in 1,000,000 has a particular rare disease for which there is a fairly accurate diagnostic test. This test is correct 99.2% of the time when given to a person selected at random who has the disease; it is correct 99.6% of the time when given to a person selected at random who does not have the disease. 4

Given this information, can we find

- (a) the probability that a person who tests positive for the disease has the disease?
(b) the probability that a person who tests negative for the disease does not have the disease?

Should a person who tests positive be very concerned that he or she has the disease?

Question-6

- a. Explain the recursive definition of the functions. Provide recursive definitions for the functions described below: 4
- (i) $f: \mathbb{N} \rightarrow \mathbb{N}$ gives the number of snails in your terrarium n years after you built it, assuming you started with 3 snails and the number of snails doubles each year.
(ii) $g: \mathbb{N} \rightarrow \mathbb{N}$ gives the number of push-ups you do n days after you started your push-ups challenge, assuming you could do 7 push-ups on day 0 and you can do 2 more push-ups each day.
(iii) $h: \mathbb{N} \rightarrow \mathbb{N}$ defined by $h(n)=n!$
- b. A knight on a chessboard can move one space horizontally (in either direction) and two spaces vertically (in either direction) or two spaces horizontally (in either direction) and one space vertically (in either direction). Suppose that we have an infinite chessboard, made up of all squares (m, n) where m and n are nonnegative integers that denote the row number and the column number of the square, respectively. Use mathematical induction to show that a knight starting at $(0, 0)$ can visit every square using a finite sequence of moves. [Hint: Use induction on the variable $s = m + n$.] 4

- c. Devise a recursive algorithm for computing the greatest common divisor of two nonnegative integers a and b with $a < b$ using the fact that $\gcd(a, b) = \gcd(a, b - a)$. 3
- d. Using strong induction, prove that a simple polygon with n sides, where n is an integer with $n \geq 3$, can be triangulated into $n - 2$ triangles. 3

Question-7

- a. Explain Symmetric, and Antisymmetric Relations. Consider the following four relations on the set $A = \{1, 2, 3, 4\}$: 4
- (i) $R1 = \{(1, 1), (1, 2), (2, 3), (1, 3), (4, 4)\}$
- (ii) $R2 = \{(1, 1)(1, 2), (2, 1), (2, 2), (3, 3), (4, 4)\}$
- (iii) $R3 = \{(1, 3), (2, 1)\}$
- (iv) $R5 = A \times A$, the universal relation
- Determine which of the relations are Symmetric, and Antisymmetric
- b. Let, $\mathbb{N} = \{1, 2, 3, \dots\}$ and, for each $n \in \mathbb{N}$, Let $A_n = \{n, 2n, 3n, \dots\}$. Find: 6
- (i) $A_3 \cap A_5$
- (ii) $A_4 \cap A_5$
- (iii) $\cup_i \in Q A_i$, where $Q = \{2, 3, 5, 7, 11, \dots\}$ is the set of prime numbers.
- c. Determine whether the relations represented by these zero-one matrices are partial orders: 4

(i)

1	1	1
1	1	0
0	0	1

(ii)

1	1	1
0	1	0
0	0	1

Bangabandhu Sheikh Mujibur Rahman University, Kishoreganj
1st Year 1st Semester B.Sc. (Engg.) Final Examination-2023
Department of Computer Science and Engineering
PHY 1105: Physics (3 Credits)

Time: 3 Hours

Full Marks: 70

Instructions

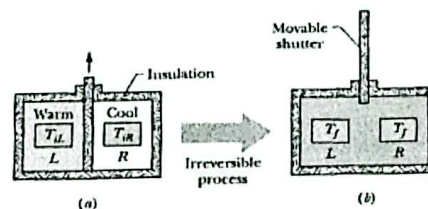
- Figures shown in the right margin indicate full marks.
- Answer 5 out of 7 questions.

Question-1

- a. What do you mean by process in thermodynamic equilibrium? Under what conditions, a process is called metastable equilibrium, quasi-equilibrium and nonequilibrium? 3
- b. State and explain first law of thermodynamics. Show that the first law of thermodynamics leads to the result that the energy of an isolated system is conserved. 4
- c. How much heat must be absorbed by ice of mass $m = 700$ g at -10°C to take it to the liquid state at 15°C ? If we supply the ice with a total energy of only 205 kJ (as heat), what are the final state and temperature of the water? (Given that the specific heat of ice is $C_i = 2220$ J/kg.K, heat of fusion $L_f = 333$ kJ/kg, specific heat of water is $C_w = 4186.8$ J/kg.K.) 7

Question-2

- a. Define entropy. Show that the entropy is a state variable. 2+5
- b. Figure shows two identical copper blocks of mass $m=1.5$ kg: block L at temperature $T_{iL} = 60^\circ\text{C}$ and block R at temperature $T_{iR} = 20^\circ\text{C}$. The blocks are in a thermally insulated box and are separated by an insulating shutter. When we lift the shutter, the blocks eventually come to the equilibrium temperature $T_f = 40^\circ\text{C}$. What is the net entropy changes of the two-block system during this irreversible process? The specific heat of copper is 386 J/kg.K. 7



Question-3

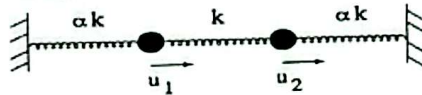
- a. Discuss briefly a reciprocal lattice and Brillouin zones. 5
- b. What are the miller indices of the line of intersection of a $(\bar{1}\bar{1}1)$ and $(\bar{1}\bar{1}\bar{1})$ plane in a cubic crystal? 5
- c. What is a band? Explain the difference between metal, insulator, and semiconductor in terms of band diagram. 1+3

Question-4

- a. Establish the differential equation of a system ensuing simple harmonic motion. Show that $x = \sin(\omega t + \phi)$ is the general solution of the differential equation. Where used symbols have their usual meanings. 6
- b. Show that the sum of the kinetic and potential energy of a spring-mass system in motion is always constant. 4
- c. Describe the shape and direction of the obtained Lissajous figures for the following cases: 4
(i) $\delta = 0$, (ii) $\delta = \pi/4$, (iii) $\delta = \pi/2$, and (iv) $\delta = \pi$

Question-5

- a. What is stationary wave? Derive the condition of forming nodes and anti-nodes when a progressive wave is reflected back from a hard boundary. 1+5
- b. Two identical objects of mass m each are connected by springs as in the figure below with spring constant k and αk . Write down the coupled differential equations of the mass-spring system. Solve the differential equation to find the normal modes and normal coordinates of the system. 8

**Question-6**

- a. What do you mean by interference of light? What are the conditions to occur interference? 2+2
- b. Consider a thin film of thickness t with refractive index μ . Find out the condition of formation of maxima and minima of the interference between reflected light. 6
- c. Newton rings are observed on a film with quasi-monochromatic light that has a wavelength of 500 nm. If the 20th bright ring has a radius of 1 cm, what is the radius of the curvature of the lens forming one part of the interfering system. 4

Question-7

- a. Define decibel. Describe the physical significance of decibel. 2+2
- b. Derive the Sabine's formula for reverberation time of sound in a hall. 10

Bangabandhu Sheikh Mujibur Rahman University, Kishoreganj
1st Year 1st Semester B.Sc. (Engg.) Final Examination-2023
Department of Computer Science and Engineering
MAT 1107: Calculus (3 Credits)

Time: 3 Hours

Full Marks: 70

Instructions

- Figures shown in the right margin indicate full marks.
- Answer 5 out of 7 questions.

Question-1

- a. Explain $(\delta - \epsilon)$ definition of a limit. Using this definition show that $\lim_{x \rightarrow 2} (x^3 - 3x + 7) = 9$ 4
- b. State L'Hopital's rule. Apply this rule to evaluate: 4
- I. $\lim_{x \rightarrow 1} \left(\frac{x}{x-1} - \frac{1}{\ln x} \right)$
- II. $\lim_{x \rightarrow 0} (\cos x)^{\cot x}$
- c. Define one-one and onto functions. If $f: X \rightarrow Y$ be a function defined by $f(x) = \frac{x-2}{x-3}$, where $X = \mathbb{R} - \{3\}$ and $Y = \mathbb{R} - \{1\}$. Show that f is one-one and onto functions. Also determine the value of a where $f^{-1}(3) = 3 - a$. 6

Question-2

- a. Define continuity and differentiability of a function. Show that if the function $f(x)$ is differentiable at $x = a$ then the function is continuous at this point. 4
- b. With the help of first principle, differentiate $x^3 \ln x$ with respect to x . 4
- c. Test the continuity and differentiability of the function 6

$$f(x) = \begin{cases} 1+x; & x \leq 0 \\ x; & 0 < x < 1 \\ 2-x; & 1 \leq x \leq 2 \\ 2x-x^2; & x > 2 \end{cases}$$

at $x = 1$. Also draw the curve and determine the domain and range from this curve.

Question-3

- a. Evaluate $\frac{dy}{dx}$ of the followings: 4
- I. $y = x^{x^x}$
- II. $x = a(\sin \theta + \theta), y = a(1 - \cos \theta)$
- b. A rectangular field is to be bounded by a fence on three sides and by a straight stream on the fourth side. Find the dimensions of the field with maximum area that can be enclosed using 1000 ft of fence. 4
- c. State the Rolle's theorem, and the Mean value theorem. Verify these two theorems for the function $f(x) = 3 + 2x - x^2$ in the interval $(0, 1)$. 6

Question-4

- a. If $F(x) = f(xf(xf(x)))$, where $f(1) = 2, f(2) = 3, f'(1) = 4, f'(2) = 5$, and $f'(3) = 6$. Find $F'(1)$. 4
- b. If $y = \tan^{-1}x$, then show that

$$(1+x^2)y_{n+2} + 2(n+1)xy_{n+1} + n(n+1)y_n = 0.$$
Also find the value of y_n when $x = 0$. 4
- c. An open box is to be made from a 16-inch by 30-inch piece of cardboard by cutting out squares of equal size from the four corners and bending up the sides. What size should the squares be to obtain a box with the largest volume? 6

Question-5

- a. Explain integral, integrand, and integration. 2
- b. Evaluate the following indefinite integrals: 12
- I. $\int \sqrt{\frac{x}{a-x}} dx$
 - II. $\int (\sin^{-1} x)^3 dx$
 - III. $\int \frac{dx}{(x-1)\sqrt{x^2+1}}$
 - IV. $\int \frac{x^2+x}{(x-1)(x^2+1)} dx$

Question-6

- a. State the fundamental theorem of calculus. 2
- b. Evaluate the following definite integrals: 12
- I. $\int_0^{\frac{\pi}{2}} \sin^4 x \cos^4 x dx$
 - II. $\int_0^{\frac{\pi}{2}} \frac{dx}{1+\sqrt{\cot x}}$
 - III. $\int_0^1 \frac{x^2+x+1}{\sqrt{1-x^2}} dx$
 - IV. $\int_0^{\pi} \frac{5 \cos x + 6}{2 \cos x + \sin x + 3} dx$

Question-7

- a. Define the anti-derivative of a function. Use the anti-derivative method to find the area under the curve $y = x^2 + 4$ over the interval $[0, 6]$. 4
- b. Find the mid point approximations of the area under the curve $y = 4 - x^2$ over the interval $[0, 3]$ with $n = 8$, and $n = 20$. 5
- c. Estimate the area under the graph of $f(x) = 1 + x^2$ from $x = -1$ to $x = 2$ using three rectangles and the right end points. Sketch the curve and approximate rectangles. 5

Bangabandhu Sheikh Mujibur Rahman University, Kishoreganj
1st Year 1st Semester B.Sc. (Engg.) Final Examination-2023
Department of Computer Science and Engineering
ENG 1109: English (3 Credits)

Time: 3 Hours

Full Marks: 70

Instructions

- Figures shown in the right margin indicate full marks.
- Answer 5 out of 7 questions.

Question-1

Read the passage carefully and answer the questions from a to e:

Change is life, change is progress and change is culture and civilization, while stagnation is the arrest of development and nothing but decay, death and destruction. Nothing great in the world is static; everything noble is dynamic. Evolution and revolution is the law of nature: at the root of all progress, all formation, all development. Time has always been the move and there are ups and downs, rise and falls of human civilization, human culture and there is man's taste and zest, inclinations and motives, likings and disliking. Monotony is distaste; variety is the spice of life; change is life and zest, its interest, its meanings. In human institutions, rise and fall happen and order and discipline, old rules and regulations, old system and process everything yields to new, surrenders to new conditions and demands. If there were no change, our life would be dull, dreary and meaningless. Our life is livable, romantic and desirable only because of change and alternation, modification and newness and novelty. And because of this change of taste and zest, motives and inclinations, we have seen kingdoms and democratic state, capitalism socialism, nationalism and internationalism. To speak bluntly, the secret of nation's strength rests basically on its capacity for change and re-adjustment. Here we should not forget to note that there have been gradual and radical changes in human history of civilization. In either case of violent or smooth change, human civilization may be beset with dangers and difficulties, odds and disadvantages. If the laws of life and nature continue working, nothing remains in its state. In short, the old ideas and old values of life become weakened and disintegrated. With progress of time, new ideas and new values of life, no matter social, political, cultural, religious, emerge out of the debris of the old.

- | | |
|--|---|
| a. Write answer to the following questions: | 2 |
| i. What does change signify? | |
| ii. What happens to everything old in the evolution of things? | |
| b. Write down the main idea and four supporting ideas in this passage. | 3 |
| c. Write down the meaning of the following words and make sentences of your own:
Stagnation, radical, development, dreary, monotony | 5 |
| d. What is the key-word in the last sentence of the passage? | 1 |
| e. Write a summary of the passage. | 3 |

Question-2

Write a paragraph on the following:

- a. Brain Drain 7
- b. Cellphones: Power Cell or Prison Cell 7

Question-3

Fill in the blanks with appropriate prepositions:

1x14=14

- a. She played — the lute.
- b. She has no eligibility — this post.
- c. Everyone irrespective — caste and creed came there.
- d. We must save money — evil days.
- e. Divide the apples — the brothers.
- f. I will go to Dhaka — 6 pm in the evening.
- g. He died — stroke.
- h. He came — a poor family.
- i. Morning breeze is conducive — health.
- j. Do not rail — the beggars.
- k. He excels — speaking English.
- l. We have reliance — the chairman.
- m. The deed bears testimony — my ownership.
- n. They are slave — passion.

Question-4

Write emails on the following:

- a. Suppose, you are a manager of City Bank. A supply company offers to supply necessary articles for your office. Now, write an email to the company to supply you with necessary office articles. 7
- b. Suppose, your neighbor has lost her father. Now, write her a condolence mail expressing your sympathy. 7

Question-5

Write short notes on the following topics from "The Tell-Tale Heart":

- | | |
|---------------------------|---|
| a. Motif of death. | 5 |
| b. Symbolism of the House | 3 |
| c. Tone | 3 |
| d. Vulture Eye | 3 |

Question-6

- | | |
|---|---|
| a. Suppose, you are Tamim/Tamima. Write a letter to the editor of a newspaper regarding the environmental pollution in Kishoreganj. | 7 |
| b. Write a letter to your friend sharing your experience of the colloquium you recently attended at BSMRU, Kishoreganj. | 7 |

Question-7

- | | |
|---|---|
| a. Suppose, you are Rana/Rani. Write an application to the Director, HR, Jamuna Electronics, for the Junior Consultant, ICT division post. Discreetly mention your qualifications so that the recruiter feels interested in calling you in for an interview. | 7 |
| b. Suppose, you are Nayeem/Naycema. You intend to apply and find yourself suitable for the post of lecturer in the Department of Computer Science and Engineering at Bangabandhu Sheikh Mujibur Rahman University, Kishoreganj. Prepare a detailed CV to send to the concerned authorities. | 7 |