

University of Dhaka

Affiliated Engineering Colleges

Department of Computer Science and Engineering

1st In - course Examination – 2022

Course : Fundamentals of Computers and Computing (CSE 1101)

Marks : 20

1. Define Computer. Describe the trend and features of fifth generation computers. 4
2. What is meant by access time? How does a cache memory work? 4
3. Define Operating System. Write down the difference between multiprogramming and multitasking operating system. 4
4. Define the following : 4
 - a) Program
 - b) Compiler
 - c) Algorithm
 - d) Flowchart
 - e) Central Processing Unit (CPU)
5. Define the terms : Computer network, network topology. Describe the general characteristics of WAN. 4

Faridpur Engineering College
Department of Computer Science & Engineering
1st year 1st Semester B. Sc. in CSE
1st Incourse Examination 2022
SS-1106 : Government and Public Administration

Total Marks: 20

Time : 50 Minutes

Answer the following questions .

- | | |
|---|---|
| 1. What is Good Governance? | 4 |
| 2. Briefly discuss the elements of Good Governance? | 6 |
| 3. What is meant by Bureaucracy? | 4 |
| 4. How accountability and transparency of bureaucrats can be ensured? | 6 |

Faridpur Engineering College

Department of CSE

1st year 1st semestr

In-course-1 Chem -1203, Chemistry

Time: 50minutes

Marks: 20

1. Calculate the maximum number of electron present in 3rd energy level of an atom using four quantum numbers. 4
2. Why NH₃ is a trigonal pyramidal molecule. 4
3. Explain the covalent character of ionic bond. 4
4. Write the electronic configuration of Cu and Fe²⁺. Why the electron affinity of Cl is more than F. 4
5. Explain the ionic radius of K⁺ is smaller than of Cl⁻. 4

University of Dhaka

Affiliated Faridpur Engineering College

Department of Computer Science and Engineering

1st year semester 1st, 1st In course Examination -2022 (Session: 2021-22)

Time: 50 mins

Marks: 20

1. (a) Define limit of a function using ($\delta-\epsilon$) . 1

(b) Evaluate (i) $\lim_{x \rightarrow \infty} \frac{x^4}{e^x}$ (ii) $\lim_{x \rightarrow 0} \left(\frac{\tan x}{x} \right)^{\frac{1}{x}}$ 3

(c) If $f(x) = |x-1| + |x+3|$ then discuss the continuity and differentiability
Of the function at $x = -3$. 3

(d) Find from first Principal the derivatives of $\tan^{-1} x$. 3

2. (a) Define continuity and differentiability of a function. 2

(b) If $f(x) = \begin{cases} x^2 \sin(\frac{1}{x}) & \text{when } x \neq 0 \\ 0 & \text{when } x = 0 \end{cases}$ 5

then show that $f(x)$ is differentiable at $x = 0$ but $f'(x)$ is not continuous at that point.

(c) Differentiate $\tan^{-1} \frac{x}{\sqrt{1-x^2}}$ With respect to $\sec^{-1} \frac{1}{2x^2-1}$ 3

University of Dhaka
Faridpur Engineering College

Department of Computer Science and Engineering

1st Year 1st Semester In course Examination – 01 (Session: 2021-22)

Course Code: CSE 1102

Time: 40 Minutes

Course Title: Discrete Mathematics

Full Marks: 20

Let $A = \{1, 2, 3, 4, 5, 6\}$ and let R be the relation on the set A :

$$R = \{(x, y) : x \text{ divides } y\}$$

a) Write R as a set of ordered pairs. [2.0]

b) Draw its directed graph. [3.0]

Consider the following five relations on the set $A = \{1, 2, 3, 4\}$:

$$R = \{(1, 1), (1, 2), (2, 3), (1, 3), (4, 4)\}$$

$$S = \{(1, 1), (1, 2), (2, 1), (2, 2), (3, 3), (4, 4)\}$$

$$T = \{(1, 3), (2, 1)\}$$

Determine whether or not each of the above relations on A is i) Reflexive [3.0]

ii) Symmetric iii) Transitive

Let $A = \{1, 2, 3, 4\}$, $B = \{4, 5, 6\}$ and $C = \{6, 7, 8\}$. R is a relation from A to B and S is a relation from B to C , which is given by

$$R = \{(x, y) : x + y = 7\}$$

$$S = \{(x, y) : y - x = 1\}$$

Determine R and S . [3.0]

Show that the premises “It is not sunny this afternoon and it is colder than yesterday,”

“We will go swimming only if it is sunny,” “If we do not go swimming, then we will take a canoe trip,” and “If we take a canoe trip, then we will be home by sunset” lead to the conclusion “We will be home by sunset.” [5.0]

Show that $\neg(p \vee (\neg p \wedge q))$ and $\neg p \wedge \neg q$ are logically equivalent by developing a series of logical equivalences. [4.0]