Tribhuvan University

Faculty of Humanities & Social Sciences

OFFICE OF THE DEAN

2019

Bachelor in Computer Applications **Full Marks: 60**
Course Title: Mathematics I **Pass Marks: 24**
Code No: CAMT 104 **Time: 3 hours**
Semester: 1st

Centre: **Symbol No:**

Candidates are required to answer the questions in their own words as far as possible.

Group A

Attempt all the questions. **[10×1 = 10]**

1. Circle (O) the correct answer.

i) If A = [-1,3) and B = [2,5], then A-B is equal to

a) [-1,2) b) [-1,3)

c) (-1,2) d) [-1,3]

ii) If $f(x)=\sqrt{x}$ and $g(x)=x+1$ then, what is the value of $gof(x)$?

a) $\sqrt{x+1}$ b) $\sqrt{x}+1$

c) $x+\frac{1}{4}$ d) $x+2$

iii) What is the reciprocal of the complex number (2,1)?

a) (1/5, 1/5) b) (2/5, -1/5)

c) (-2/5, 1/5) d) (-2, -1)

iv) What type of function $y=f(x)=ax^2+bx+c$ is?

a) Constant function b) Linear function

c) Identity function d) Quadratic function

v) Geometrical meaning of scalar triple product of three vectors $\vec{a},\vec{b},\vec{c}$ is the

a) Volume of parallelepiped formed by $\vec{a}, \vec{b}, \vec{c}$ as adjacent sides

b) $|\vec{a}|\times$ Projection of $\vec{b}$ on $\vec{a}$ and $\vec{c}$

c) $|\vec{b}|\times$ Projection of $\vec{b}$ on $\vec{a}$

d) $|\vec{a}|\times|\vec{b}|\times|\vec{c}|$

vi) If a, b, c is in H.P then, what is the value of b?

a) $\frac{a+c}{2}$ b) $\sqrt{ac}$

c) $\frac{2ac}{a+c}$ d) $2\frac{\sqrt{ac}}{a+c}$

vii) Which of the following is the rank of the Matrix $\begin{bmatrix} 2 & 4 \\ 2 & 4 \end{bmatrix}$?

a) 0 b) 1

c) 2 d) 3

viii) In how many ways 6 persons can seat in a round table?

a) 720 b) 360

c) 120 d) 60

ix) Let $A=\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$, and a map $T: R^2 \rightarrow R^2$ defined by T(x)=A(x) then what is the image of $u=\begin{bmatrix} 1 \\ 2 \end{bmatrix}$ under T?

a) $\begin{bmatrix} 1 \\ 2 \end{bmatrix}$ b) $\begin{bmatrix} 1 \\ 1 \end{bmatrix}$

c) $\begin{bmatrix} 0 \\ 2 \end{bmatrix}$ d) $\begin{bmatrix} 2 \\ 1 \end{bmatrix}$

x) If $r=\frac{1}{1+\cos\theta}$ then, this is the equation of..

a) Parabola b) Hyperbola

c) Ellipse d) Circle