[11×1=11]

## NEB-GRADE XII 2081 (2024) Mathematics

(For Regular Students only)

(For the students whose first two digits of registration number starts from 80)

Group 'A'

Rewrite the correct options of each questions in your same answer sheet.

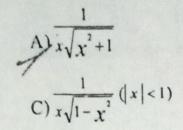
The permutation of 'n' things taken 'r' at a time when each things may

Attempt all the questions.

occur any numbers of times is...

	A) n ways	B) rn ways	C) n' ways	D) $(n \times r)$ ways.	: 4	
2.		Which one of the following is Euler's form of complex number -i?				
	A) $e^{\frac{\pi i}{4}}$		B) $e^{\frac{3\pi i}{2}}$			
	(C) $e^{\frac{3\pi i}{4}}$		D) $e^{\frac{\pi i}{2}}$			
3. in $\triangle ABC$ , $\angle A=30^{\circ}$ , $\angle B=45^{\circ}$ , which one of the following is a:c?						
	42 1 1			$\frac{\sqrt{3}+1}{2\sqrt{2}} \qquad \qquad D)\frac{2}{\sqrt{2}}$		
4	A) $y^2-4y-4y$ $(x)$ $2y^2+3x$	c+4 = 0 $c^2-6=0$	$B1.2y^2-3x^2-6$ $D) 2x^2+2y^2 =$	e axis and conjugate  =    72		
5	. It is given the	hat $\vec{a}$ and $\vec{b}$	are two vector	s such that $ \vec{a} \times \vec{b} $	=  a.b	
What is the angle between $\vec{a}$ and $\vec{b}$ ?						
	Α) π	B) $\frac{\pi}{2}$	$C)\frac{\pi}{4}$	$D) \frac{\pi}{6}$		
(	20% studen student sele	ts failed in scie	ence and 15% for the probability	students failed in ma failed in both of the of the student fail in n	subjects. A	
	A) $\frac{3}{7}$	B) $\frac{4}{7}$	$C)\frac{3}{4}$	$\sqrt{D}$ ) $\frac{1}{4}$		
	A) 7	5, 7	<u> </u>	2,4	C	

7. Which one of the following is the derivative of cosec h-1 (x)?



$$B)\frac{-1}{x\sqrt{\chi^2+1}}$$

D) 
$$\frac{-1}{x\sqrt{1-x^2}} (|x| < 1)$$

- 8. Which one of the following is equal to  $\lim_{x \to 0} \frac{e^{3x}-1}{2x}$ ?
  - A) 0

- B)  $\frac{1}{2}$
- C)  $\frac{3}{2}$
- D) 3
- 9. Which one of the following represents the equation of normal to the curve  $x^2 = 2y$  at the point (-2, 2)?
  - A) 2x+y+6=0
- B) 2x-2y+6=0
- C) 2x-y+6=0
- D) x-2y+6=0
- 10. Which one of the following is the solution of differential equation  $x \, dy-y \, dx = 0$ ?
  - A) x = cy
- B) y cx
- C) xy = c
- D) x-y = c
- 11. In Gauss elimination method, the coefficient of the variables of the element  $a_{ij}$  where i = j are known as...
  - A) pivot element
- B) common element
- C) non basic element
- D) basic element

Or

A shot 40 kg projected from a 400 kg gun with a velocity of 60 m/sec, then the velocity with which the gun would commence to recoil, if free to move in the line of projection is

- A) 6 m/sec
- B) 60 m/sec
- C) 6 km/min
- D) 600 m/sec