

# KEAM 2024 June 5 (Day 1) Question Paper (Unofficial)

Q. 1

If  $|\vec{A} \cdot \vec{B}| = |\vec{A} \times \vec{B}|$ . Then angle between  $\vec{A}$  and  $\vec{B}$

Q. 2

20. Identify the isotopes from the following pairs

- A)  ${}^2_1\text{H}$  and  ${}^3_1\text{H}$    B)  ${}^{197}_{79}\text{Au}$  and  ${}^{198}_{80}\text{Hg}$    C)  ${}^3_1\text{H}$  and  ${}^3_2\text{He}$    D)  ${}^{235}_{92}\text{U}$  and  ${}^{238}_{92}\text{U}$   
E)  ${}^{35}_{17}\text{Cl}$  and  ${}^{37}_{17}\text{Cl}$

Q. 3

19. Centre of circle  $(x-3)(x+1) + (y-1)(y+3) = 0$

- A) (3, -1)   B) (-1, -3)   C) (3, -3)   D) (-1, 1)   E) (1, -1)

Q. 4

26.  $\cos A \cos 2A$  is equal to

- A)  $\frac{\sin 4A}{4 \sin A}$    B)  $\frac{\cos 2A}{2 \sin A}$    C)  $\frac{\cos 2A}{\sin 3A}$    D)  $\frac{\sin 2A}{\sin A}$    E)  $\frac{\sin 4A}{2 \sin A}$

Q. 5

The electromagnetic radiations used in LASIK surgery and cell phone are respectively

Q. 6

28. Total number of 4 digit numbers greater than 7000 using the digits 2, 5, 7, 8, 9  
A) 370      B) 375      C) 475      D) 575      E)

Q. 7

An object in free fall covers 80m in first 4 seconds. The distance covered in next 4 seconds is

Q. 8

A body, taken above the surface of the Earth, loses 20% of its weight. The height to which the body is taken is

Q. 9

A ray of light passes through a medium with frequency  $4 \times 10^{14}$  Hz and wavelength 450nm. The refractive index of the medium is

Q. 10

21. The de-Broglie wavelength associated with an electron accelerated by a potential difference of 3V lies in which region of the electromagnetic spectrum?