Q: In the CGS system, $1/\epsilon 0$, is replaced by if k is the dielectric constant of the medium.

Q: Identify the correct statement:

quark has one electronic charge

quark has a fractional charge

quark is neutral particle

quark has 2 electronic charge

Q: The incident intensity on a horizontal surface at sea level from the sun is about 1kWm-2. Assuming that 50 per cent of this intensity is reflected and 50 per cent is absorbed, determine the radiation pressure on this horizontal surface (in pascals).

Q: Two short magnets having magnetic moments in the ratio 27: 8, when placed on opposite sides of a deflection magnetometer, produce no deflection. If the distance of the weaker magnet is 0.12 m from the centre of the deflection magnetometer, the distance of the stronger magnet from the centre is?

Q: When the current through a solenoid increases at a constant rate, the induced current Increases with time and opposite to the direction of the instantaneous current

Increases with time and is in the direction of the instantaneous current

Is constant and is opposite to the direction of the instantaneous current

Is constant and is in the direction of the instantaneous current

Q: The half-life of a radioactive nucleus depend on?

Q: A bright point that appears at the center of a circular object shadow due to Fresnel diffraction is called

Fresnel

Rayleigh

Fraunhofer

Poisson

Q: Three wheels can complete 40, 24 and 16 revolutions per minute respectively. There is a red spot on each wheel that touches the ground at time 0. After how much time, all these spots will simultaneously touch the ground again?

Q: A question came from drift velocity

Q: A chemical equation was given and the appropriate reagent was asked from the from 4 option.

Q: A compound was given and the best method to prepare it was asked. Four options were given.

Q: What is the structure of 4-hydroxy Pentanal?

Q: An SN1 reaction was given and its major product was ked. Four options were given.

Q: Which of the following goes fast hydrolysis, Four options were given.

Q: Which of the following compounds is the least reactive towards the aromatic electrophilic substitution reaction? Four options were given.

Q: For the overall cell reaction, H2PO3 (aq.) + 7 H+ (aq.) + 7 e- \rightarrow PH3 (g) + 3H2O (I), if the pH is increased, the cell potential?

Q: The crystal field stabilisation energy of Na4[Fe(CN)6] is

Q: Which of the following reagents is not appropriate for the given transformation? Four options were given.

Q: The halide, which undergoes nucleophilic substitution (by SNAr mechanism) most readily is - four options were given

Q: Which amino acid is present only in bacteria and cyanobacteria?

Q: The product of Perkin reaction is?

Q: Choose the correct statement

Both actinoids and lanthanoids are less basic.

Both actinoids and lanthanoids do not show same oxidation of +3

Both actinoids and lanthanoids do not exhibit magnetic and spectral properties

Both actinoids and lanthanoids are electropositive

Q: Mannose gives a silver mirror test with Tollen's reagent. It shows the presence of:

Q: The rate constant for the reaction at 300 K and 350 JK are 8 and 160 L mol. L-1. S-1, respectively.

Q: The half-life of a radioactive nucleus depend on?

Q. Four expressions were given, and was asked which of them is meaningful.

Q: The length of the tangent from the origin to the circle centred at the given equation was asked.

Q: If a<0, then the function $f(x) = ax^2 + bx + c$ has a maximum value at?

Q: Three wheels can complete 40, 24 and 16 revolutions per minute respectively. There is a red spot on each wheel that touches the ground at time 0. After how much time, all these spots will simultaneously touch the ground again?

Q: A librarian purchased 60 story books for his library. but he found that he could get extra 4 books by spending INR 336 and then the overall average price of the books would be reduced by INR 1. The previous average price of each book was?

Q: Simplify the following expression (4x + 1)2(4x + 3)(4x - 1)

Q: Starting from point X, Jayant walked 15 m towards the west. He turned left and walked 20 m. He then turned left and walked 15 m. After that, he turned to his right and walked 12 m. How far and in which directions is now Jayant from X?

Q: Find lim $ax^2 + bx + c$

Q: If a<0, then the function $f(x) = ax^2 + bx + c$ has a maximum value at?

