



1to1 GURU

Learn to Lead, Learn to Succeed

Date :-15/01/2022

Time :-30 Minutes

Exam Name :-NEET-
1to1Guru-2

Mark :- 80

1.	b	(b) New unit of mass is $\frac{1}{6.67 \times 10^{-11}}$ kg ie, 1.5×10^{10} kg.
2.	b	(b) $p = \sqrt{2mE_k}$ E_k is increased by a factor of 4, p becomes double. So, percentage increase in momentum is 100%
3.	a	
4.	b	<p>(b) The impedance (Z) of an RLC series circuit is given by</p> $Z = \sqrt{R^2 + \left(\omega L - \frac{1}{\omega C}\right)^2}$ <p>As frequency of alternating emf applied to the circuit is increased, X_L goes on increasing and X_C goes on decreasing.</p> <p>For a particular value of $\omega = (\omega_r \text{ say })$</p> $X_L = X_C$ <p>ie, $\omega_r L = \frac{1}{\omega_r C}$</p> <p>or $\omega_r = \frac{1}{\sqrt{LC}}$</p> <p>or $2\pi v_r = \frac{1}{\sqrt{LC}}$</p> <p>or $v_r = \frac{1}{2\pi\sqrt{LC}}$</p> $\therefore v = \frac{1}{2 \times 3.14 \times \sqrt{5 \times 80 \times 10^{-6}}}$ $= \frac{1}{2 \times 3.14 \times \sqrt{(400 \times 10^{-6})}}$ $= \frac{1}{2 \times 3.14 \times 2 \times 10^{-2}}$ $= \frac{100}{3.14 \times 4}$ $= \frac{25}{3.15} = \frac{25}{\pi} \text{ Hz}$
5.	a	(a) $a = \frac{g \sin \theta}{1 + \frac{K^2}{R^2}} = \frac{g \sin 30^\circ}{1 + \frac{1}{2}} = \frac{g/2}{3/2} = \frac{g}{3}$
6.	c	<p>(c) From the aqueous buffered solution of HA, 50% HA is ionised</p> $[HA] = [A^-]$ <p>Buffer solution of weak acid $HA \rightarrow$ acidic buffer</p> $pH = pK_a + \log \frac{[A^-]}{[HA]}$ <p>or $pH = pK_a = 4.5$</p> $pOH = pK_w - pH$ $pOH = 14 - 4.5 = 9.5$
7.	c	(c) The basic character of hydrides decreases down the group or acidic character increases down the group. Also H_2O is neutral.
8.	b	(b) Complex $[Co(en)_3]^{3+}$ has no plane of symmetry and centre of symmetry that's why it is optically active.

9.	c	<p>(c) Grignard reagent ($RMgX$) with aldehyde) other than formaldehyde ($HCHO$) gives 2° alcohol. Aldehyde on reaction with C_2H_5OH/HCl gives acetal.</p> $ \begin{array}{c} \text{H}_3\text{C}-\overset{\text{O}}{\parallel}{\text{C}}-\text{H} + \text{CH}_3\text{MgBr} \longrightarrow \text{H}_3\text{C}-\overset{\text{OMgBr}}{\underset{\text{CH}_3}{\text{C}}}-\text{H} \\ \text{acetaldehyde} \\ \text{or} \\ \text{ethanal} \end{array} \xrightarrow{\text{H}_2\text{O}/\text{H}^+} \begin{array}{c} \text{H}_3\text{C}-\overset{\text{OH}}{\underset{\text{CH}_3}{\text{C}}}-\text{H} \\ \text{2-propanol} \end{array} $ $ \begin{array}{c} \text{H}_3\text{C}-\overset{\text{O}}{\parallel}{\text{C}}-\text{H} + 2\text{C}_2\text{H}_5\text{OH} \xrightarrow{\text{Dry HCl}} \text{CH}_3\text{CH} \begin{array}{l} \nearrow \text{OC}_2\text{H}_5 \\ \searrow \text{OC}_2\text{H}_5 \end{array} + \text{H}_2\text{O} \\ \text{ethanal} \qquad \qquad \qquad \text{acetal} \end{array} $
10.	c	(c) As per Pauli's exclusion principle no two electrons in the same atom can have all the four quantum numbers equal or an orbital cannot contain more than two electrons and it can accommodate two electrons only when their directions of spins are opposite.
11.	d	(d) Heterosis is also known as hybrid vigour. It is the presence of superior qualities in the hybrid than either of the parents. The term hybrid vigour was given by G H Shull.
12.	d	(d) Telophase is the reverse stage of prophase. During this phase, the cytoplasmic viscosity decreases and the two chromosome groups reorganize themselves into nuclei. A nucleae envelope appears outside the nucleoplasm collected in the area of chromatin. Spindle fibres disappear around the poles and Golgi complex and endoplasmic reticulum are reformed
13.	a	(a) Archaeocytes are undifferentiated embryonic amoebocytes of sponges with blunt pseudopodia and large nucleus. These show totipotency and it can produce other types of cells needed by sponges.
14.	a	<p>(a) Irrespective of the fact whether plant is haploid or diploid, it has haploid gametes</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Haploid parent</p> <p>↓ Mitosis cell division</p> <p>Haploid gametes</p> </div> <div style="text-align: center;"> <p>Diploid plant</p> <p>↓ Meiosis cell division</p> <p>Haploid gametes</p> </div> </div> <p>In mitotic cell division the chromosome number remains the same. In meiotic cell division the chromosomes number becomes half</p>
15.	c	(c) Permanent localised qualitative change in size, biochemistry, structure and function of cells or organs is called differentiation
16.	a	(a) Embryogenesis refers to the development of embryo from the zygote. During embryogenesis, zygote undergoes cell division (mitosis) and cell differentiation. Cell division of zygote is called cleavage
17.	a	(a) : Ethanol is much less polar than water. Adding it to the solution disrupts the screening charges exerted by water. The electrical attraction between phosphate and any positive ions () present in solution becomes strong enough to form a stable ionic bond and DNA precipitates. Ethanol precipitation is a widely used technique to purify, or concentrate nucleic acid
18.	c	(c) In eukaryotes, 80 S type ribosomes are found. They are divided into two subunits, the larger is 60 S and smaller is 40 S.
19.	b	
20.	c	(c) : Photosystem II has almost equal number of chlorophyll a and chlorophyll b molecules. It is dark green in colour and located mostly in the appressed parts of grana thylakoids

| | |towards the inner surface of membranes.



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