DIRECTORATE OF SCHOOL EDUCATION TAMILNADU

12NPCB01 (2023-24)	NEET PRACTICE QUESTIONS (TEST-1)	Class : XII Time : 1.15 hrs Total Marks : 240

Answer key

12TH Physics

1. **Ans : D**

   $q_1 = +6\mu c$, $q_2 = +q\mu c$ $r = d$

   $F \times q_1 q_2 \rightarrow F \times 6 \times 10^{-6} \times 9 \times 10^{-6}$

   $F^1 \times q_1^1 q_2^1 \rightarrow F^1 \times 3 \times 10^{-6} \times 6 \times 10^{-6}$

   $$\frac{F^1}{F} = \frac{18 \times 10^{-12}}{54 \times 10^{-12}} = \frac{1}{3}$$

   $$F^1 = \frac{F}{3}$$

2. **Ans : B**

   $n = 10^{19}$

   $e = 1.6 \times 10^{-19} c$

   $q = nc = 10^9 \times 1.6 \times 10^{-19}$

   $q = +1.6 \, c$

3. **Ans : D**

   $q = 10^{10}$

   $e = 1.6 \times 10^{-19} \, c$

   $q = 1c$

   $$\frac{q}{t} = 10^{10} \times 1.6 \times 10^{-19}$$

   $$\frac{1}{t} = 1.6 \times 10^{-9}$$

$$t = \frac{10^9}{1.6} = \frac{10^{10}}{1.6} \sec$$

$$t = \frac{10^{10}}{16 \times 3600 \times 24 \times 3652.5} \text{ years}$$

t = 20 years

4. **Ans : A**

Let the separation be r

$$F = \frac{k.q(Q-q)}{r^2}$$

For maximum force $\frac{dF}{dq} = 0$

$$\frac{dF}{dq} = \frac{f}{dF} \frac{(kq(Q-q))}{r^2} = \frac{k}{d^2}(Q-2q)$$

$$\frac{k}{d^2}(Q-2q) = 0$$

Q – 2q = 0

Q = 2q

$$\frac{Q}{q} = 2$$

5. **Ans : (4)**

For equilibrium $F_A = F_3$

$$\frac{KQ^2}{(2n)^2} + \frac{kQq}{n^2} = 0$$

$$\frac{kqQ}{n^2} = \frac{kQ^2}{4n^2}$$

$$q = \frac{Q}{4}c$$

6. **Ans : C**

$$E = \frac{1}{4\pi E_0} \frac{nc}{r^2}$$

$$n = \frac{Er^2 4\pi E_o}{e}$$

$$n = \frac{0.036 \times 0.1 \times 0.1}{9 \times 10^9 \times 1.6 \times 10^{-19}}$$

n = 2.5 × 10^5 N/c

7. **Ans : A**

   Electric field inside the shell is Zero.

8. **Ans : A**

   In quaitrium

   QE = mg $\qquad \rightarrow$ NeE = mg

   $$n = \frac{mg}{eE}$$

   $$n = \frac{9.6 \times 10^{-16} \times 10}{20000 \times 16 \times 10^{-19}}$$

   n = 3

   Ans: 4.8 × 10^{-19}c, 3

9. **Ans : B**

   $$L = h^a c^b G^c$$
   $$M^2 L^1 T^0 (M^1 L^2 T^{-1})^a \ (LT^{-1})^b \ (M^{-1}L^3T^{-2})$$

   a = 1/2, b = −3/2, c= 1/2

   $$L = \frac{\sqrt{hG}}{c^{3/2}}$$

10. **Ans : C**

    Momentum = MLT^{-2}

    Plank constant = ML^{2}T^{-1}

11. **Ans : B**

    T – 2.5C $\qquad$ ΔT = 21S

    $$\frac{\Delta T}{T} \times 100 = \frac{21}{2.5} \times 100 = 20\%$$

12. **Ans : C**

    x – at – bt^2

$x = bt^2$

$b = x/t^2 = Km/S^2 = KmS^{-2}$

13. **Ans : D**

Dimensions of $\dfrac{e^2}{4\pi \in o} = F \times d^2 = ML^3T^{-2}$

$$l \propto \left(\dfrac{C^2}{4\pi Eo}\right)^a G^b C^c$$

$$L^1 = (ML^3T^{-2})^a (M^{-1}L^3T^{-2})^b (LT^{-1})^c$$

On solving $a = \dfrac{1}{2} \, b = \dfrac{1}{2} \, c = -2$

$$l = \dfrac{1}{c^2}\left[\dfrac{Ge^2}{4\pi Eo}\right]^{1/2}$$

14. **Ans : C**

$$\dfrac{\Delta y}{y} = \dfrac{2\Delta m}{m} + \dfrac{4\Delta r}{r} + \dfrac{x\Delta g}{g} + \dfrac{3}{2}\dfrac{\Delta l}{l}$$

$18 = 2 \times 1 + 4 \times 0.5 + xp + \dfrac{3}{2}\,(4)$

$\qquad 8 = xp$

From option

$$x = \dfrac{16}{3} \, P = \pm\dfrac{3}{2}$$

15. **Ans : C**

Dimension of work and Torque ML^2T^{-2}

12th – CHEMISTRY

16. Ans : B

$[R_n]^{86} \, 5f^{14} \, 6d^{10} \, 7s^2 \, 7p^2$ belongs to carbon family

17. Ans : B

Option (i) and option (ii)

18. Ans : A

Amongst isoelectronic species, smaller the positive charge on the cation smaller is the ionic radius.

19. Ans : A

[Ne] $3s^2\ 3p^3$ 5th group

Ionisation energy increases in a period and decreases in group.

20. Ans : D

CaO is basic oxide

B_2O_3 , BeO amphoteric

SiO_2 acidic

21. Ans : B

$Ca^{2+} < K^+ < Ar < Cl^- < S^{2-}$

	Ca^{2+}	K^+	Ar	Cl^-	S^{2-}
Atomic number	20	19	18	17	16
Charge of nucleus	20p	19p	18p	16p	17p
Number of electrons	18e-	18e-	18e-	18e-	18e-

22. Ans : A

5th group

23. Ans : B

24. Ans : C

25. Ans : A

26. Ans : B

$H_2N - NH_2$, $OH^{\ominus}$

wolff kishner reduction is prepared by over clemmenson reduction to avoid reduction of phenolic OH group simultaneously.

27. Ans : D

28. Ans : D

PCC mild oxidizing agent

29. Ans : A

30. Ans C

12th – BOTANY

31.   Ans: B
These plants are example for natural method of vegetative propagation.

32.   Ans: D
Budgrafting : T - shaped incision done only in budgrafting method
Tongue grafting : in tongue grafting both the scion and stalk must be the same size.

33.   Ans: C
The pollen wall is differentiated into two layer, namely inner layer called intine and outer layer called exine.

Intine is thin uniform and is made up of pectin, hemicelluloses, cellulose and callose together with proteins.

Exine is thick and is made up of cellulose sporopollenin and pollenkit.

The pollen protoplast consist of dense cytoplasm with a centrally located nucleus.

The germpore helps in the formation of the pollen tube and the released of the male gametes during fertilization.

34. **Ans: D**

Liquid nitrogen (-196˚c) is used to preserve pollen in viable condition for duration. this technique is called cryopreservation and is used store pollen grains (pollen banks) of economically important crops for breeding programmes.

35. **Ans: A**

Influenza virus and wound tumour virus the nucleic acid is present in segments.

36. **Ans: B**
37. **Ans: C**

38. **Ans: A**

In 1928 the bacteriologist Frederick Griffith demonstrated transformation in Mic using diplococcus pneumonia.

39. **Ans: B**

Offset is a vegetative part of a plant formed by mitosis.

40. **Ans: D**

Pollen grain Is odd one among all the other three. Pollengrain is a male gametophyte structure whereas all the other three i.e nucellus, microphyle, embroyosac are found inside ovule.

41. **Ans: C**

Tapetum is the inner most wall layer of microsporangium that nourishes developing pollen grains.

42. **Ans: C**
43. **Ans: D**
44. **Ans: A**
45. **Ans: C**

12th – ZOOLOGY

46. A) Class – Order – Family – Genus – Species

47. A) will decrease

48. D) Both Assertion and Reason are false

49. B) A-2, B-3, C-1, D-4

50. D) Species

51. C) I, IV and V

52. B) Evolutionary and phylogenetic

53. D) Inter specific hybridization

54. A) Bacteria

55. D) Dino flagellates

56. C) Isogamy is seen in Monosystis

57. C) A 4, B 1, C 2, D 3

58. A) I, II, III, VI

59. D) Both A and R are false.

60. A) A 2, B 1, C 4, D 3