

Answers of Practice Test 05

Biology

1. c. Angiosperms
2. c. Papaya
3. c. Edible part of the fruit
4. a. Geitonogamy

Physics

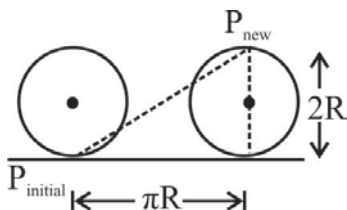
5. (b) According to the principle of dimensional homogeneity $[P] = \left[\frac{a}{V^2} \right]$

$$\Rightarrow [a] = [P] [V^2] = [ML^{-1}T^{-2}][L^6] = [ML^5T^{-2}]$$

$$\text{or unit of } a = \text{gm} \times \text{cm}^5 \times \text{sec}^{-2} = \text{Dyne} \times \text{cm}^4$$

6. (b) Horizontal distance covered by the wheel in half revolution = πR

$$\text{So the displacement of the point which was initially in contact with a ground} = \sqrt{(\pi R)^2 + (2R)^2}$$



7. (a) differentiating time with respect to distance $\frac{dt}{dx} = 2\alpha x + \beta \Rightarrow v = \frac{dx}{dt} = \frac{1}{2\alpha x + \beta}$

$$\text{So, acceleration (a)} = \frac{dv}{dt} = \frac{dv}{dx} \cdot \frac{dx}{dt} = v \frac{dv}{dx} = \frac{-v \cdot 2\alpha}{(2\alpha x + \beta)} = -2\alpha \cdot v \cdot v^2 = 2\alpha v^3$$

Chemistry

5. (b) Tetragonal system has the unit cell dimension $a = b \neq c, \alpha = \beta = \gamma = 90^\circ$.

6. (b) MgO contains rock salt ($NaCl$) structure.

7. (c) atomic mass of C is 12 so neutrons = $12 - 6 = 6$ Similarly atomic mass of Si is 28 so neutrons = $28 - 14 = 14$ Thus ratio becomes 3:7

Biology

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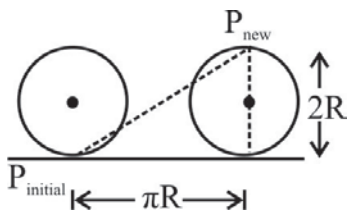
12. (b) According to the principle of dimensional homogeneity $[P] = \left[\frac{a}{V^2} \right]$

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Chemistry

5. (b) Tetragonal system has the unit cell dimension $a = b \neq c, \alpha = \beta = \gamma = 90^\circ$.
6. (b) MgO contains rock salt ($NaCl$) structure.
7. (c) atomic mass of C is 12 so neutrons = $12 - 6 = 6$ Similarly atomic mass of Si is 28 so neutrons = $28 - 14 = 14$ Thus ratio becomes 3:7

Practice test 04

1. Ans. 2)

2. Ans. 2) NCERT –XII, para 4.2, Page – 59
NCERT – XII, para 4.2, Page – 66
3. Ans 2) NCERT Pg. # 29
4. Ans 1)
5. And. 4)

The length of the vector is not changed by the rotation of the coordinate axes.

$$\sqrt{(n+1)^2 + 1^2} = \sqrt{n^2 + 3^2} \Rightarrow n = 3.5$$

6. Ans. 1)
7. Ans. 3)
8. Ans. 2)
9. Ans. 2)
10. Ans. 3)

Practice Test 03

Biology

Q 1. Ans. 2) NCERT XI Pg. # 72, Fig. 5.11 & 5.12

Q 2. Ans. 3) NCERT – XII, Para 3.4, Page – 50, 51
NCERT – XII, Para 3.4, Page-54, 55

Q 3. Ans. 2) NCERT – XII, para 4.2, Page – 59
NCERT – XII, para 4.2, Page – 66

Q 4. Ans. 4) NCERT Pg. # 33

Physics

Q5. Ans. 4)

$$\frac{x_1}{x_2} = \frac{4}{3} \tan \theta \text{ and } x_1 \times x_2 = 48 \sin 2\theta \cos \theta = 24$$

$$\sin 2\theta x_1 \times x_2 = 8 \sin \theta + 6 \cos \theta = 10 \sin(\theta + \alpha)$$

$$\text{Here } \alpha = \tan^{-1} \frac{3}{4}$$

Q 6. Ans. 1)

$$|\vec{P} - \vec{Q}| = \sqrt{P^2 + Q^2 - 2PQ \cos 90^\circ} = 10$$

Q 7. Ans. 3)

Chemistry

- Q 8. Ans. 4)
- Q 9. Ans. 4)
- Q 10. Ans. 1)

PRACTICE TEST 02 (ANSWER)

Biology

1. Ans: 1)
2. Ans 3)
3. Ans 1) NCERT Pg # 35
4. Ans 2) NCERT Pg. # 32

Physics

5. Ans Ans 4)

Here $a = y$; $b = y/t$; $c = y/t^2$

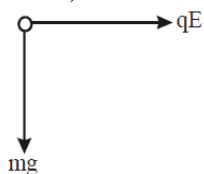
$$abc = (y/t)^3$$

6. Ans 1)

$$\frac{\Delta g}{g} \% = \frac{\Delta \ell}{\ell} \times 100 + 2 \frac{\Delta T}{T} \times 100$$

$$= \frac{0.1}{100} \times 100 + 2 \times \frac{0.1}{50} \times 100 = 0.5\%$$

7. Ans 4)



$$F_{\text{net}} = \sqrt{(qE)^2 + (mg)^2}$$

$$a_{\text{net}} = \sqrt{\left(\frac{qE}{m}\right)^2 + (g)^2} = a_{\text{effective}}$$

Chemistry

8. Ans 1)
9. Ans 2)
10. Ans 3)

PRACTICE TEST 01 (ANSWER)

BIOLOGY

Ans 1. (3)

Ans 2. (4)

Ans 3. (4)

Ans 4. (3)

PHYSICS

Ans 8. (4)

$$\frac{dA}{dt} = 10t + 4$$

$$\text{at } t = 3s \frac{dA}{dt} = 34m^2/s$$

Ans 9. (4) (iii), (iv)

Ans 10. (2) 9s

$$\text{Given: } v = 20ms^{-1}, u = 10ms^{-1}$$

$$\text{and } s = 135m$$

$$\therefore a = \frac{400 - 100}{2 \times 135} = \frac{300}{270} = \frac{10}{9} m/s^2$$

$$v = u + at \text{ or } t = \frac{v - u}{a} = \frac{10m/s}{\frac{10}{9} m/s^2} = 9s$$

CHEMISTRY

Ans 5. (3)

Ans 6. (2)

Ans 7. (4)