

Science

- Q1) Balance the following chemical equation and identify the type of reaction : (3)
- $$Al + H_2O \longrightarrow Al_2O_3 + H_2$$
- Q2) Define Corrosion. Explain any two methods to Prevent Corrosion with Examples. (3)
- Q3) (a) What is meant by PH of a solution? (5)  
(b) Why does tooth decay occur when pH of mouth falls below 5.5?  
(c) Write two uses of Baking Soda.
- Q4) Write :  
o Chemical formula of washing soda (3)  
o One method of Preparation  
o One use of washing soda.
- Q5) Explain the process of Respiration in human beings with the help of a neat labelled diagram. (5)
- Q6) Differentiate between :  
(a) Inhalation and Exhalation (3)  
(b) Pulmonary artery and pulmonary vein.
- Q7) What is reflex action? Explain the role of Spinal Cord in reflex action with a labelled diagram. (5)
- Q8) Name the Plant Hormone responsible for :  
o Growth of roots (3)  
o Inhibition of growth  
o Ripening of fruits
- Q9) Explain inheritance of traits using a monohybrid cross taking height of a plants as an example. (5)
- Q10) Define :  
o Sexual Reproduction      o Menstrual cycle (3)  
o Asexual Reproduction

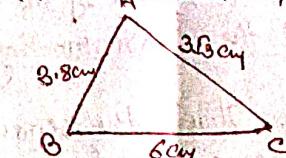
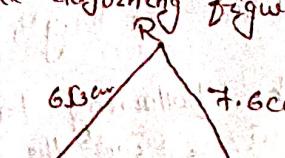
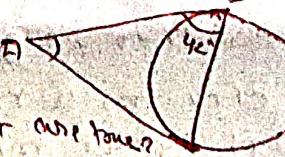
- Q11) Draw a ray diagram to show image formation by a Convex mirror when the object is placed:  
o (a) At infinity  
o (b) At a finite distance from the mirror
- Circuit
- Q12) Define Electric Current. Draw a labelled diagram to measure Current using Ammeter.
- (3)
- Q13) An Electric heater has a resistance of  $10\Omega$  and is connected to a 220V source.  
Calculate:  
(a) Current flowing through the heater  
(b) Power consumed
- (5)
- Q14) State Fleming's Right hand rule. Mention one use of this rule.
- (3)
- Q15) What are magnetic field lines? Draw the magnetic field pattern due to current-carrying straight conductor
- (5)
- Q16) Define trophic level. Why is the number of organisms decreases as we move to higher trophic levels?
- (3)
- Q17) Give two differences between:  
o Biodegradable substances  
o Non-biodegradable substances
- (2)
- Q18) What is Speciation? Mention two factors responsible for speciation.
- (3)
- Q19) Why detergents are preferred over soaps in hard water?
- (3)
- Q20) State Saponification reaction.
- (2)
- Q21) Define 10% law.
- (2)
- Q22) How can you differ asexual reproduction with sexual reproduction?
- (3)

- (Q23) A wire of resistance  $5\Omega$  is connected to a 10V battery. (3)  
 i. Calculate the current flowing through the wire.  
 ii. Find the electric power consumed in the circuit.
- (Q24) An object is placed at a distance of 80cm in front of a concave mirror of focal length 15cm. (3)  
 i. Find the position of the image formed.  
 ii. Calculate the magnification.  
 iii. State the nature of the image.
- (Q25) A straight conductor carrying a current of 5A is placed perpendicular to a magnetic field of strength 0.2T. (3)  
 The length of the conductor is 0.4m.  
 Calculate the force acting on the conductor.
- (Q26) How can you differ double-displacement reaction with displacement reaction. State with an example of each. (3)
- (Q27) The pH of a solution is 3. It is : (1)  
 (a) Strongly basic (b) Weakly basic (c) Weakly acidic (d) Strongly acidic.
- (Q28) What is voluntary actions? Which part of the brain controls it. (3)
- (Q29) Draw a neat labelled diagram of heart and explain the complete functions of the heart which is performed by it. (5)
- (Q30) The image formed by a convex mirror is always: (1)  
 (a) Real and inverted  
 (c) Virtual and erect  
 (b) Real and erect  
 (d) Virtual and inverted.
- (Q31) SI unit of Power: (1)  
 (a) volt (b) watt (c) Ampere (d) Joule
- (Q32) If the resistance of a conductor is doubled, keeping voltage constant, the current will (1)  
 (a) becomes double  
 (c) Remains same  
 (b) Becomes half  
 (d) Become zero

For more you can visit:

<https://singh-anubh.github.io/PYQ/>

Best of Luck,

- Q1) If  $x = ab^3$  and  $y = a^3b$ , where  $a$  and  $b$  are prime numbers, then  
 $[HCF(x, y) - LCM(x, y)]$  is equal to? (1 mark)  
 (a)  $1 - a^3b^3$  (b)  $ab(1-ab)$  (c)  $ab - a^4b^4$  (d)  $ab(1-ab)(1+ab)$
- Q2) The number of red balls in a bag is 10 more than the number of black balls. If the probability of drawing a red ball at random from this bag is  $\frac{3}{5}$ , then the total number of balls in the bag is? (1 mark)  
 (a) 50 (b) 60 (c) 80 (d) 40
- Q3)  $\triangle ABC$  and  $\triangle PQR$  area shown in the adjoining figures. The measure of  $\angle C$  is? (1 mark)  
 (a)  $140^\circ$  (b)  $80^\circ$  (c)  $88^\circ$  (d)  $60^\circ$  (e)  $40^\circ$   
  

- Q4) A 30m long rope is tightly stretched and tied from the top of Pole to the ground. If the rope makes an angle of  $60^\circ$  with the ground, the height of the pole is? (1 mark)  
 (a)  $10\sqrt{3}m$  (b)  $30\sqrt{3}m$  (c)  $15m$  (d)  $15\sqrt{3}m$
- Q5) The cumulative frequency for calculating median is obtained by adding the frequencies of all the? (1 mark)  
 (a) classes up to median class (b) classes following the median class  
 (c) classes preceding the median class
- Q6) If  $ax+by = a^2-b^2$  and  $bx+ay = 0$ , then the value of  $xy$  is? (1 mark)  
 (a)  $a^2-b^2$  (b)  $a+b$  (c)  $a-b$  (d)  $a^2+b^2$
- Q7) Three numbers in A.P have the sum 30. What is its middle term? (1 mark)  
 (A) 4 (B) 10 (C) 16 (D) 8
- Q8) In the Given fig. AB and AC are tangents to the circle. If  $\angle ABC = 42^\circ$ , then the measure of  $\angle BAC$  is? (1 mark)  
 (A)  $96^\circ$  (B)  $42^\circ$  (C)  $106^\circ$  (D)  $86^\circ$   

- Q9) Which of the following statement are true? (1 mark)  
 (a)  $\sin 20^\circ > \sin 70^\circ$  (b)  $\sin 20^\circ > \cos 20^\circ$   
 (c)  $\cos 20^\circ > \cos 70^\circ$  (d)  $\tan 20^\circ > \tan 70^\circ$
- Q10) On the top face of the wooden cube of side 7cm, hemispherical depressions of radius 0.35cm are to be formed by taking out the wood. The maximum number of depressions that can be formed is? (1 mark)  
 (a) 400 (b) 100 (c) 20 (d) 10

- Q) Prove that  $\sqrt{5}$  is an irrational number.
- Q) Find the value of 'k' for which the following system of linear equations has infinitely many solutions:
- $$kx + 4y = k - 4$$
- $$16x + ky = k$$
- $k=8$
- Q) A 20m long wire is attached to the top of a vertical pole and fixed to a point on the ground. If the wire makes an angle of  $30^\circ$  with the horizontal ground, calculate the height of the pole.
- $10\sqrt{3}$
- Q) The corresponding sides of two similar triangles  $\triangle XYZ$  and  $\triangle LMN$  are in the ratio  $4:7$ . If the altitude of  $\triangle XYZ$  is 8cm, find the length of the corresponding altitude of  $\triangle LMN$ .
- $14\text{cm}$
- Q) The following table shows the scores of students in a math quiz. Find the mean and mode. Mean =  $33.8$ , Mode =  $34.44$
- | Score-Interval     | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 |
|--------------------|-------|-------|-------|-------|-------|
| Number of Students | 5     | 12    | 20    | 10    | 3     |
- Q) A pair of dice is thrown once. Find the probability that the sum of the numbers appearing on the top faces is:
1. Exactly 7       $\frac{6}{36} = \frac{1}{6}$
  2. At least  $\frac{11}{12}$ .
- Q) Prove that  $\frac{\sin\theta - \cos\theta + 1}{\sin\theta + \cos\theta - 1} = \frac{1}{\sec\theta - \tan\theta}$
- Q) In two concentric circles, the chord of the larger circle that touches the smaller circle. The centre of both circles is O. If  $AB = 28$  and  $OP = 8$ , then the radius of the <sup>larger</sup> circle is
- (a) 28 (b) 38 (c)  $2\sqrt{28}$  (d)  $5\sqrt{2}$        $28$
- Q) PA and PB are two tangents drawn from an external point P to a circle. If the angle between the two tangents ( $\angle APB$ ) is  $70^\circ$ , find the measure of  $\angle PAB$ .
- $55^\circ$
- Q) A clock has a minute hand of length 21cm. Calculate the area swept by the minute hand b/w 8:00 AM and 8:20 AM.
- $= 462\text{cm}^2$
- Q) The area of a sector of a circle with radius 9cm is  $27\pi\text{ cm}^2$ . Find the measure of the central angle.
- $120^\circ$
- Q) Prove: (i)  $\sin\theta = \sqrt{1 - \cos^2\theta}$   
(ii)  $\operatorname{cosec}\theta = \operatorname{cosec}\theta \cdot \frac{1}{\operatorname{tana}\theta}$