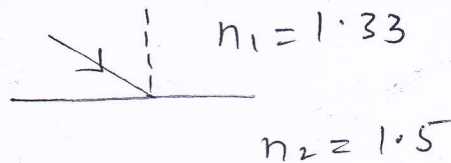


BIRLA BALIKA VIDYAPEETH, PILANI

SAMPLE PAPERS

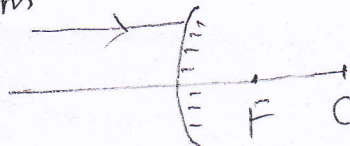
Class XI
Subject: Physics M.M:25 Time:45mns

- 1) What happens to the resistance of a wire if it is made thinner? (1)
- 2) A current of 1 A is drawn by a filament of an electric bulb. What is the number of electrons passing through a cross-section of the filament in 16 seconds? (1)
- 3) Name two safety measures commonly used in electric circuits and appliances? (1)
- 4) Complete the ray diagram (1)



- 5) For which colour, the refractive index of the material of a prism is maximum and minimum? (1)
- 6) Why are danger signals red in colour? (1)
- 7) Name the rule which is used to find the direction of induced current? (1)

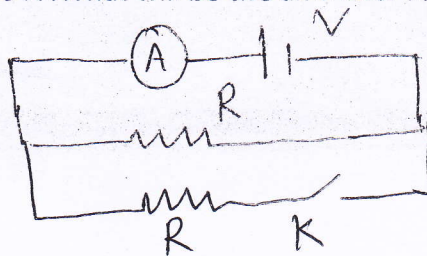
- 8) Label angle of incidence and angle of reflection and complete the ray diagram (2)



- 9) A convex lens of focal length 10 cm is combined with a concave lens of focal length 15 cm. Find the focal length and power of the combination? (2)

- 10) Define absolute refractive index. Find the speed of light in a medium whose refractive index is 1.5? (2)

- 11) In a diagram shown the cell and ammeter both have negligible resistance. With the switch K open the ammeter reads 0.6 A. What will be the ammeter reading when the switch is closed? (3)



12) An object is placed 15 cm from a convex mirror of radius of curvature 90 cm. Calculate the position and magnification of image? (3)

13) The image obtained with a convex lens is erect and its size is four times the size of the object. If the focal length of the lens is 20 cm. Calculate the object and image distance? (3)

14) The near point of a hypermetropic person is 50 cm from the eye. What is the power of the lens required to enable him to read clearly a book held at 25 cm from the eye? (3)

40

Class XI Subject: Chemistry

Time allowed: 30 Min

Maximum Marks: 25

Q1: (a) How many atoms of hydrogen are present in 0.5 moles of H_2SO_4 ? [2]

(b) How many moles of $CaCO_3$ are present in 20 gms of $CaCO_3$ (at mass C = 12, O = 16, Ca = 40)

Q2: Write IUPAC name of the following [3]

(i) CH_3COCH_3 (ii) CH_3CHO (iii) $CH_3CH_2CH_2OH$

Q3: Write the formula of: [2]

(i) Methanoic Acid (ii) Ethyne

Q4: Write the boiling point of water and melting point of ice in Kelvin scale? [2]

Q5: Balance the following reaction and identify the oxidation and reducing agent: [2]



Q6: Three elements A, B and C have atomic number 10, 12 and 17 respectively: [3]

(i) In which group and period element C is placed in the periodic table?

(ii) Which of them is (a) noble gas (b) Halogen

(iii) What is the valency of element B ?

Q7: Write the formula of:

(a) Aluminium sulphate (b) Ammonium hydroxide

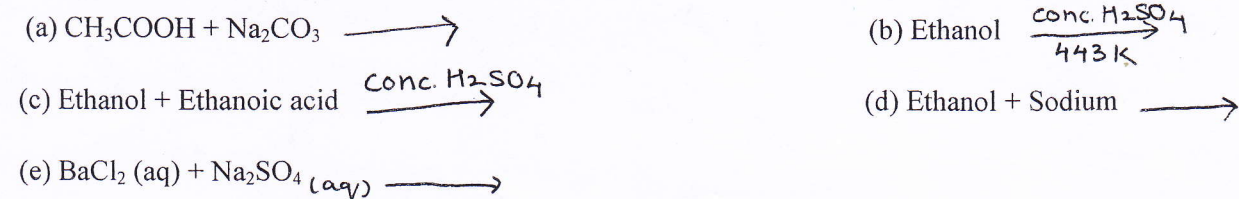
Q8: Two sample A and B have pH value 2 and 10 respectively:

(a) Which has more hydrogen in concentration?

(b) Which of them is basic?

Q9: Find the atomic number and number of neutron in ${}_{17}^{35}Cl$ [2]

Q10: Complete the following: [5]



CLASS XI, MATHEMATICS

M.M:25

TIME: 30 min.

Q1 to Q5 carry 2 marks each and Q6 to Q10 carry 3 marks each.

Q 1. Is it possible to design a rectangular mango grove whose length is twice its breadth, and the area is 800m^2 ? If so, find its length and breadth.

Q2. If $(1, 2)$, $(4, y)$, $(x, 6)$ and $(3, 5)$ are the vertices of a parallelogram taken in order, find x and y .

Q3. Check whether -150 is a term of the arithmetic progression: $11, 8, 5, 2, \dots$

Q4. Prove that in any rhombus the sum of squares of the sides is equal to the sum of squares of the diagonals.

Q5. Using trigonometric identities, write the expression $\frac{1 - (\sin^4 A + \cos^4 A)}{\sin^2 A \cos^2 A}$ as an integer.

Q6. A box contains 90 discs which are numbered from 1 to 90. If one disc is drawn at random from the box, find the probability that it bears (i) a two digit number (ii) a perfect square number (iii) a multiple of 5.

Q7. An observer 1.5 m tall is 28.5 m away from a tower. The angle of elevation of the top of the tower from her eyes is 45° . Find the height of the tower.

Q8. If A and B be two Zeros of the quadratic polynomial $2x^2 - 3x + 7$, evaluate $A^2 + B^2$.

Q9. Solve the pair of linear equations $31x + 57y = 150$ and $57x + 31y = 202$.

Q10. A quadrilateral ABCD is drawn to circumscribe a circle. Prove that $AB + CD = AD + BC$.

Birds

Biology
Class XI

M.M. -25

Time-30 min

- Q1. Name the membrane of heart.
- Q2. Name the master gland of the body.
- Q3. Write the name of hormone responsible for generation of seeds.
- Q4. Name two STD's.
- Q5. Expand IUCD.
- Q6. What is residual volume?
- Q7. Name the tissue responsible for conduction of water and minerals in plants.
- Q8. Write the function of scrotum in male reproductive system.
- Q9. What is the name of the tissue joining two bones?
- Q10. What are fossils? How do we find its age?
- Q11. Name a bacterial and a protozoan disease in man.
- Q12. Name two neurotransmitters.
- Q13. One person who drinks continuously cannot stand steadily. Why?
- Q14. Why do we withdraw our hands from a hot pan?
- Q15. What is phototropism? Give one example.
- Q16. What is the role of pancreas in digestive system?
- Q17. How do plants trap solar energy?
- Q18. What is the excretory unit of human body?
- Q19. Why are blood capillaries thin walled in nature?
- Q20. What do you understand by haemodialysis?
- Q21. Give two methods of asexual reproduction which an amoeba undergoes.
- Q23. What is synapse?
- Q24. Write two features of a prokaryotic cell?
- Q25. Name the cell organelle called the suicide bag of the cell?
