

NEW STANDARD ACADEMY

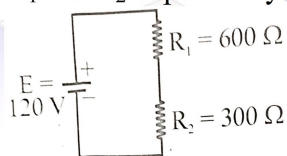
Marks: 80

CLASS : 10TH

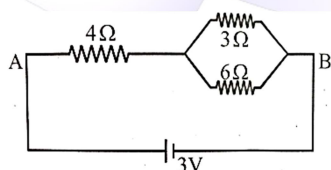
Time: 3 HRS

PHYSICS

- List in tabular form two differences in between a voltmeter and an ammeter.
- A bulb is rated 60 W, 240 V. Calculate its resistance when it is on. If the voltage drops to 192V, what will be the power consumed and the current drawn?
- Explain the term resistance. Give its SI unit of measurement.
- On what factors does the resistance of a conductor depend?
- Draw a labelled circuit diagram showing three resistors R_1 , R_2 and R_3 connected in series with a battery (E), a rheostat (Rh), a plug key (K) and an ammeter (A) using standard circuit symbols. Use this circuit to show that the same current flows through every part of the circuit. List two precautions you would observe while performing the experiment.
- Derive the formula for the calculation of work done when current flows through a resistor.
- You are given n identical wires, each of resistance R . When these are connected in parallel, the equivalent resistance is X . When these will be connected in series then new resistance will be
- In the circuit the battery is ideal. A voltmeter of resistance 600Ω is connected in turn across R_1 and R_2 , giving reading V_1 and V_2 respectively:

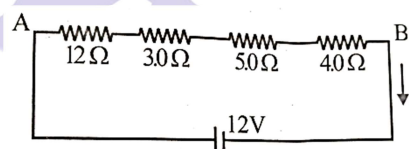


9.



10.

- The potential drop across the 3Ω resistor is:
- The equivalent resistance between points A and B is:
- The current flowing through in the given circuit is :



- The equivalent resistance between points A and B is
- The current through each resistor is
- The potential drop across the 12Ω resistor is:

CHEMISTRY

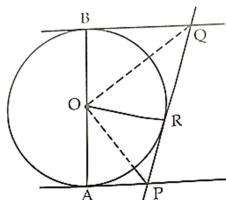
- Be the electron dot structure of carbon dioxide which has the formula CO_2 ?
- What would be the electron dot structure of a molecule of sulphur which is made up of eight atoms of sulphur?
- How many single and double bonds are present in (a) CH_4 (b) CCl_4
- What is the decreasing order of bond strength between carbon atoms in C_2H_6 , C_2H_4 , and C_2H_2 ?
- How many unshared pairs of electrons are present in the molecules.
(a) CH_4 (b) NH_3 (c) H_2O
- Write the number of covalent bonds in C_2H_6 , butane (C_4H_{10}) and C_2H_8 .
- What are covalent compounds? Why are they different from ionic compounds? List their three characters properties.
- Why are most carbon compounds poor conductors of electricity?
- Explain why carbon generally forms covalent compounds?
- Give reason why carbon neither forms C_4^+ cation or C^{4-} anion?

BIOLOGY

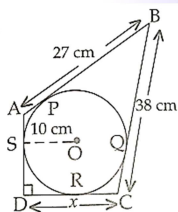
21. What is double fertilization?
22. Define syngamy & triple fusion.
23. Draw a well labelled diagram of ovule.
24. Described the parthenocarpic fruit with example.
25. What is pollination?
26. Define bisexual flower and unisexual flower with example.
27. Name the male sex organ & female reproductive organ in flower
28. Define Autogamy and geitonogamy.
29. Explain Xenogamy. Write advantage of Xenogamy.
30. Explain budding with Diagram

MATHS

31. In the adjoining figure, AB is a diameter of the circle with centre O. AP, BQ and PQ are tangents to the circle. Prove that $\angle POQ = 90^\circ$.

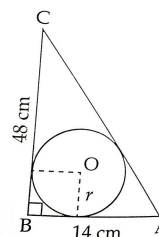


32. Prove that the tangents drawn at the ends of a chord of a circle make equal angles with the chord.
33. Two concentric circles are of radii 4 cm and 3 cm find the length of the chord of the larger circle that touches the smaller circle.
34. If a circle touches the side BC of a triangle ABC at P and the extended sides AB and AC at Q and R respectively, Prove that: $AQ = \frac{1}{2}(BC + CA + AB)$
35. In the adjoining figure quadrilateral ABCD is circumscribed. If the radius of incircle (centre O) is 10 cm and $AD \perp DC$, find the value of x



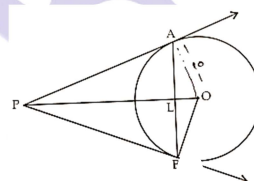
36. In the adjoining figure, ABC is a triangle in which $\angle B = 90^\circ$, $BC = 48$ cm and $AB = 14$ cm. A circle is inscribed in the triangle

whose centre is O. Find the radius of the



incircle.

37. In the adjoining figure, AB is a chord of length 16 cm of a circle with centre O and of radius 10 cm. The tangents at A and B intersect at the point P. Find the length of PA.



38. A box contains 5 red marbles, 8 white marbles and 4 green marbles. One marble is taken out of the box at random. What is the probability that the marble taken out will be
 - (i) red?
 - (ii) white?
 - (iii) not green?
39. If 65% of the population have black eyes, 25% have brown eyes and the remaining have blue eyes, what is the probability that a person selected at random has
 - (i) blue eyes
 - (ii) brown or black eyes
 - (iii) neither blue nor brown eyes?
40. Savita and Hamida are friends. What is the probability that both will have
 - (i) different birthday? (Ignore a leap year)
 - (ii) the same birthday?