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RAPID REVISION MOCK PAPERS

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(2021-2022)

# BOARD
## MOCK TEST
# PAPER
## Class-X

(ACADEMIC SESSION 2021-2022)

TARGET

**MP BOARD EXAMINATION**

SUBJECTS

**Science**

**125+**
Total Classroom
Campus

**2200000+**
Trusted & Chosen
by Students across all Modes
(since 1988)

**40**
Total Study
Centers

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**600000 +**
DLP STUDENTS HAVE TRUSTED ALLEN
(Since 1997)

**148+**
Total Test
Centers

SCIENCE

## SECTION-A

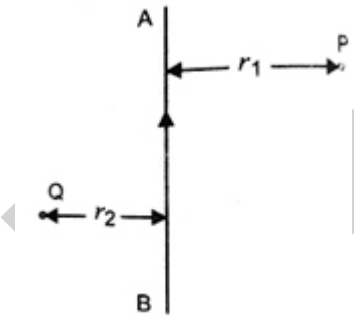
### PHYSICS MARKS : 12

**This section contains 04 questions.**

**1.** AB is a current carrying wire in the plane of paper as shown. **[2]**

a) What is the direction of magnetic field produced at points P and Q?

b) What is the ratio of magnetic field produced at points P and Q?

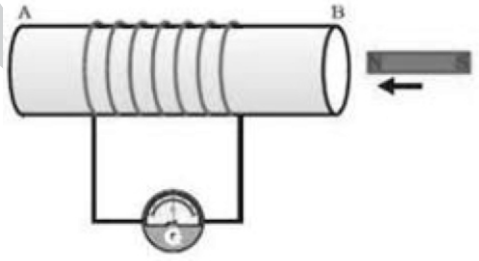



***OR***

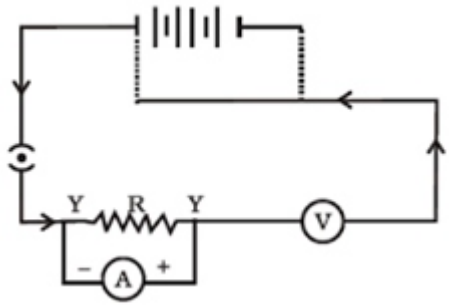
A coil of wire AB having large number of turns is connected to a galvanometer as shown. A strong bar magnet with its north pole is moved towards the end B.

a) Do you find any change in the galvanometer needle? Give reason.

b) If the magnet is kept stationary and the coil is moved away from the magnet, is there any change observed in the galvanometer needle?




**2.** A student has designed the electric circuit to study Ohm's law as shown. His teacher told him that the circuit needs correction. Write any two errors in the circuit and redesign it after making all corrections. **[3]**




**3.** Arun is going to make some snacks like coffee, toast and popcorn for his friends. He turns on a toaster of 900 W and popcorn in the microwave of 1200 W simultaneously. A fuse of 10 A rating is installed in his apartment which may blow when he turn on too many appliances at 220 V.

a) Should he start the coffee maker of 600 W?

b) Compare the maximum power delivered in the circuit and extra power consumed when all the three appliances run together? **[3]**

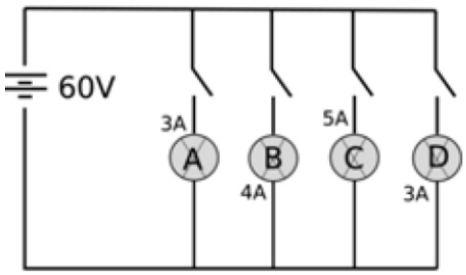
***OR***

In the circuit, A, B, C and D are four lamps connected with a battery of 60 V.

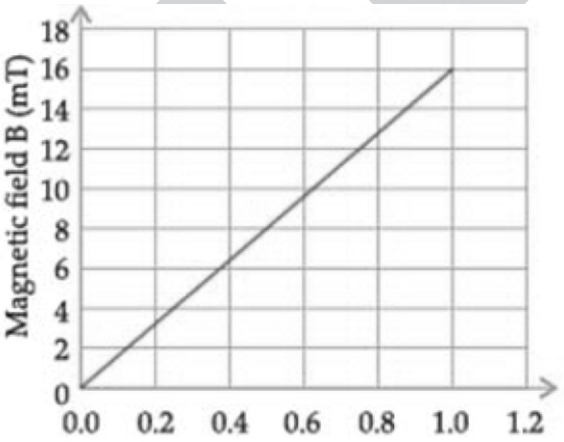
a) Write one advantage of this combination of lamps.

b) Which lamp will glow brightest? Show calculation.

c) Find the total resistance of the circuit.



**4.** A solenoid is a long helical coil of wire through which a current is run to produce a magnetic field. The magnetic field of the solenoid is due to superposition of the fields due to the current through each coil. It is nearly uniform inside the solenoid and is zero outside the solenoid. The field pattern of a solenoid is similar to the field of a bar magnet having a north pole at one end and a south pole at other end depending on the direction of current flow. A graph is obtained while performing an experiment to see the variation of magnetic field with respect to the current in the solenoid.




a) Draw the magnetic field lines of a current carrying solenoid.

b) What will happen if a soft iron bar is placed inside a solenoid?

c) Write the factors on which strength of magnetic field of a solenoid depends.

***OR***

Analyse the graph and write the strength of magnetic field for the current of 0.8 A.

## CHEMISTRY MARKS : 10

**This section contains 04 questions.**

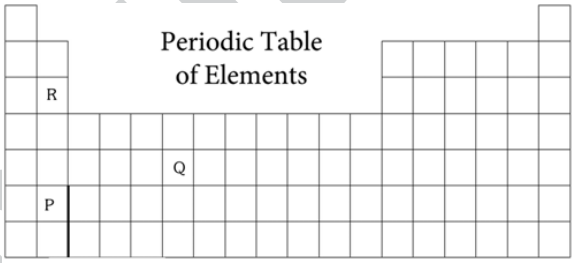
**5.** The table shows the molecular formula of few compounds -

| Compound | Molecular formula |
|---|---|
| A | $C_4H_8$ |
| B | $C_5H_{12}$ |
| C | $C_3H_6$ |
| D | $C_4H_{10}$ |

(a) Identify which compounds are saturated or alkanes.

(b) Write one difference between saturated and unsaturated hydrocarbons.

**6.** The diagram below shows part of the periodic table.




(a) Which element can be termed as transition element.

(b) Between the two elements, 'P' and 'R' which will have more electropositive nature.

**7.** Choose an element from period 3 of modern periodic table that matches the description given below in each instance. Given one reason for your choice.

(a) It's octet is complete. (b) It has zero valency.

(c) It occur in the nature as gaseous element and member of inert gas.

**8.** (a) How many isomers are possible for the compound with the molecular formula ($C_5H_{12}$). Also draw the structure of branched chain isomer.

(b) Is $C_2H_2$ and $C_2H_4$ are homologous to each other. If yes then give reason and if not then also give reason.

***OR***

(a) Write IUPAC name of methyl alcohol and also draw its electron dot structure.

(b) Write name and molecular formula of second member of alkene family.

## SECTION-C

**BIOLOGY** **MARKS : 18**

**This section contains 07 questions.**

**9.** Name the parts/structure of human female reproductive system involves in **[2]**
(i) Development of egg
(ii) Fertilization of egg
(iii) Implantation of fertilized egg
(iv) Providing nutrition to developing embryo

**10.** What happens when **[2]**
(i) Bryophyllum leaf falls on the wet soil ?
(ii) On maturation sporangia of Rhozopus bursts?

**11.** How do Mendel's experiment show that traits may be dominant or recessive ? **[2]**

***OR***

In pea plant, find the contrasting trait if :
(i) Position of flower is terminal
(ii) Shape of pod is constricted
(iii) Colour of flower is white
(iv) Colour of seed is yellow

**12.** (i) DDT has entered food chain. Which food habit is safer vegetarian or non-vegetarian ?

(ii) In a food chain consisting of grass, frog, bird snake, insects, where will the concentration of the harmful chemicals be maximum ? **[2]**

***OR***

(i) Why are there rarely more than five links (steps) in a food chain ?

(ii) If 5 joules of energy is available at producer level (plants), then how much energy will be transferred to the lion in the following food chain ?
Plants $\rightarrow$ Goat $\rightarrow$ Lion

**13.** Sex determination in human depends upon 23rd pair of chromosomes, called the sex chromosomes. If it were a homologous pair XX, it would be a female. If it were a heterologous pair XY, it would be a male. Based on this statement, answer these questions **[3]**

(i) How many genetic types of egg/ova and how many genetic types of sperms, female and male human being will produce respectively ?

(ii) Which parent's contribution of sex chromosomes determines sex of a child ?

(iii) The chromosome number of the parents and their children always remain same. Justify.

**14.** (i) What is ozone ? How is it formed ? **[3]**
(ii) How does ozone layer protect us from harmful effects in the environment ?
(iii) Write two harmful effects of ozone depletion.

**15.** Aarav in his experiment on pea plants first crossed pure-bred pea plants having round-yellow seeds with pure-bred pea plants ahving wrinkled-green seeds and found that only round-yellow seeds were produced in the $F_1$ generation. When $F_1$ generation pea plants having round-yellow seeds were cross-bred by self pollination, then peas having round-yellow seeds, round-green seeds, wrinkled-yellow seeds and wrinkled-green seeds were produced. Aarav collected a total of 2160 seeds. **[4]**

(i) Identify the type of cross in above case.

(ii) What would be the phenotype ratio of $F_2$ generation?
(iii) Calculate the number of following seeds obtained by Aarav -
(a) round green seeds (b) wrinkled green seeds
(c) round yellow seeds (d) wrinkled yellow

***OR***

Pure breed round-yellow pea seeds have genotype RRYY and the pure-breed wrinkled - green pea seeds have genotype rryy. Keeping this in mind, write the phenotypes of the following genotypes of hybrid pea seeds obtained by Aarav
(a) Rryy (b) rrYy
(c) rrYY (d) RRyy