



CAMEROON GENERAL CERTIFICATE OF EDUCATION BOARD
General Certificate of Education Examination

580 PHYSICS 1

JUNE 2014

ORDINARY LEVEL

Centre No. & Name	
Candidate No.	
Candidate Name	

580 PHYSICS 1: MULTIPLE CHOICE QUESTION PAPER

One and a half Hours

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you start answering the questions in this paper. Make sure you have a soft HB pencil and an eraser for this examination.

1. USE A SOFT HB PENCIL THROUGHOUT THE EXAMINATION.
2. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

Before the examination begins:

3. Check that this question booklet is headed "Ordinary Level -- 580 Physics 1"
4. Insert the information required in the spaces above.
5. Insert the information required in the spaces provided on the answer sheet using your HB pencil: **Candidate Name, Exam Session, Subject Code, Centre Number and Candidate Number.** Take care that you do not crease or fold the answer sheet or make any marks on it other than those asked for in these instructions.

How to answer the questions in this examination

6. Answer ALL the 50 questions in this Examination. All questions carry equal marks.
7. Calculators are allowed.
8. Each question has FOUR suggested answers: A, B, C and D. Decide on which answer is correct. Find the number of the question on the Answer Sheet and draw a horizontal line across the letter to join the square brackets for the answer you have chosen.
For example, if C is your correct answer, mark C as shown below:
[A] [B] [C] [D]
9. Mark only one answer for each question. If you mark more than one answer, you will score a zero for that question. If you change your mind about an answer, erase the first mark carefully, then mark your new answer.
10. Avoid spending too much time on any one question. If you find a question difficult, move on to the next question. You can come back to this question later.
11. Do all rough work in this booklet, using, where necessary, the blank spaces in the question booklet.
12. Mobile phones are NOT allowed in the examination room.
13. You must not take this booklet out of the examination room. All question booklets and answer sheets will be collected at the end of the examination.
14. You may find the following constants useful:
- acceleration of free fall, $g = 10 \text{ m/s}^2$
- the speed of light in vacuum $c = 3 \times 10^8 \text{ m/s}$
- the charge on an electron $e = -1.6 \times 10^{-19} \text{ C}$.

Turn Over

SECTION 1
(31 Questions)

Directions:

Each of the questions or incomplete statements in this section is followed by four suggested answers. Select the best answer in each case.

Questions 1 - 31

1. Which of the following forces increases with increase in speed?
 - A Friction
 - B Drag force
 - C Weight
 - D Upthrust
2. Which of the following physical quantities is a vector quantity?
 - A Mass
 - B Density
 - C Weight
 - D Speed
3. The elastic limit of a material is
 - A the maximum length stretched by a force and deforming it
 - B the maximum force stretching the material and deforming it
 - C the maximum length stretched by a force without deforming it
 - D the maximum force stretching the material without deforming it
4. A body gains a positive charge when rubbed against another body because:
 - A it gains protons
 - B it loses protons
 - C it loses electrons
 - D it gains electrons
5. An electric heater rated 2000 W, 240 V is run from a three pin-plug fitted with a fuse. The most suitable fuse rating is:
 - A 2 A
 - B 9 A
 - C 5 A
 - D 7 A
6. Two bulbs are connected to a constant pd source. When one of them explodes, the current in the other
 - A increases
 - B decreases
 - C remains the same
 - D increases and then decreases
7. The half-life of a radioactive element is 20 days. How long would it take its activity to drop from 20 counts per minute to 5 counts per minutes?
 - A 100 days
 - B 15 days
 - C 40 days
 - D 4 days
8. A source of sound emits a note of frequency 900 Hz. If the velocity of sound is 300 m/s, the wavelength is
 - A 3.0 m
 - B 0.3 m
 - C 0.5 m
 - D 5.0 m
9. Which of the following particles or rays is most ionizing?
 - A Alpha
 - B beta
 - C gamma
 - D UV

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10. Sound waves will not pass through a vacuum but light will pass. This is because
- A sound has a lower speed in air than light
 - B sound is a mechanical wave
 - C sound is longitudinal in nature
 - D sound cannot be seen like light

11. An object is placed 5 cm from a converging lens of focal length 10 cm. The image formed is:
- A real and on the same side as the object
 - B real and inverted
 - C virtual and erect
 - D virtual and on the opposite side of the object

12. The average acceleration of a body is
- A the change in velocity over time taken
 - B the average velocity over time taken
 - C the total velocity over time taken
 - D the final velocity over time taken

13. Figure 2 below shows an oil jar on which two holes have been made at P and Q at different heights from the base.

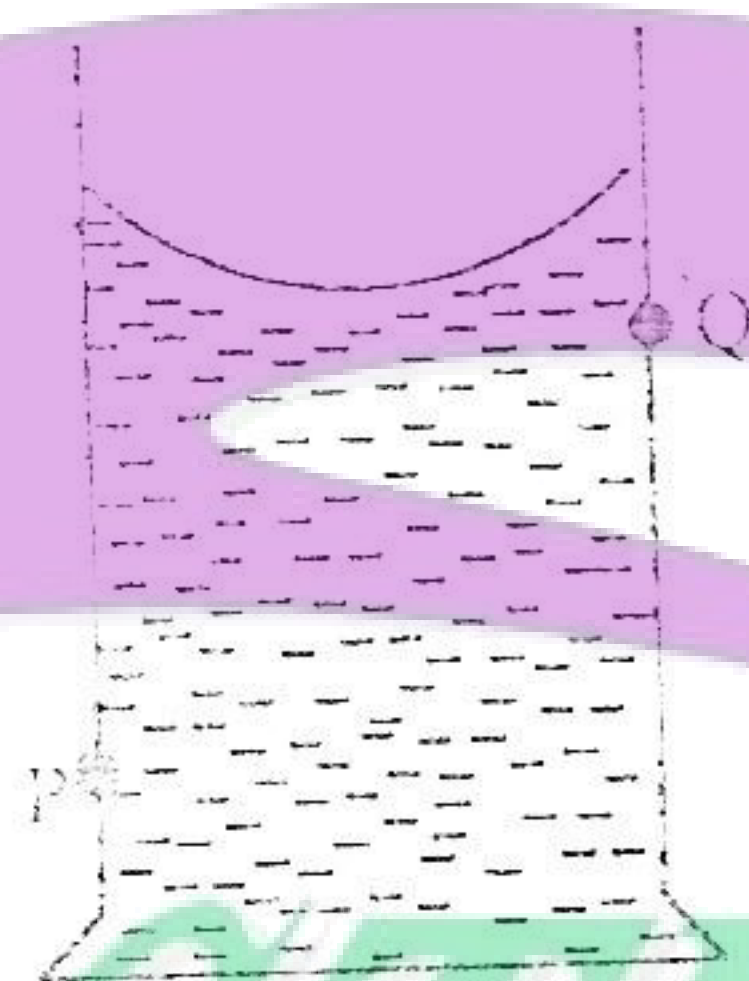


Figure 2

Which of the following statements is true?

- A The pressure at P is higher than that at Q
 - B The pressure at Q is lower than atmospheric
 - C Atmospheric pressure does not affect the pressure at P
 - D The oil jet from Q falls further from the base than the oil jet from P.
14. A plastic ball is rubbed against a duster and the duster gains 2 positive charges. The charge on the ball will be
- A 4 positive charges
 - B 2 positive charges
 - C 4 negative charges
 - D 2 negative charges

15. The voltage across the battery terminals when not supplying current is 24 V. This implies that
- A It can produce 24 J of electrical energy per coulomb
 - B It can supply a maximum current of 24 A
 - C its electromotive force is 24 V
 - D its potential difference is 24 V

16. A transformer is 75 % efficient. This means that
- A its power output is 75 %
 - B its power input is 75 %
 - C 75 % of its output energy is wasted
 - D 25 % of its input energy is wasted

17. Which of the following is true of all electromagnetic waves?
- A They have the same wavelength
 - B They are produced by electric sources
 - C They are affected by a magnetic field
 - D They travel at the same speed



18. Figure 3 below shows a ray of light approaching a diverging lens at its optical centre

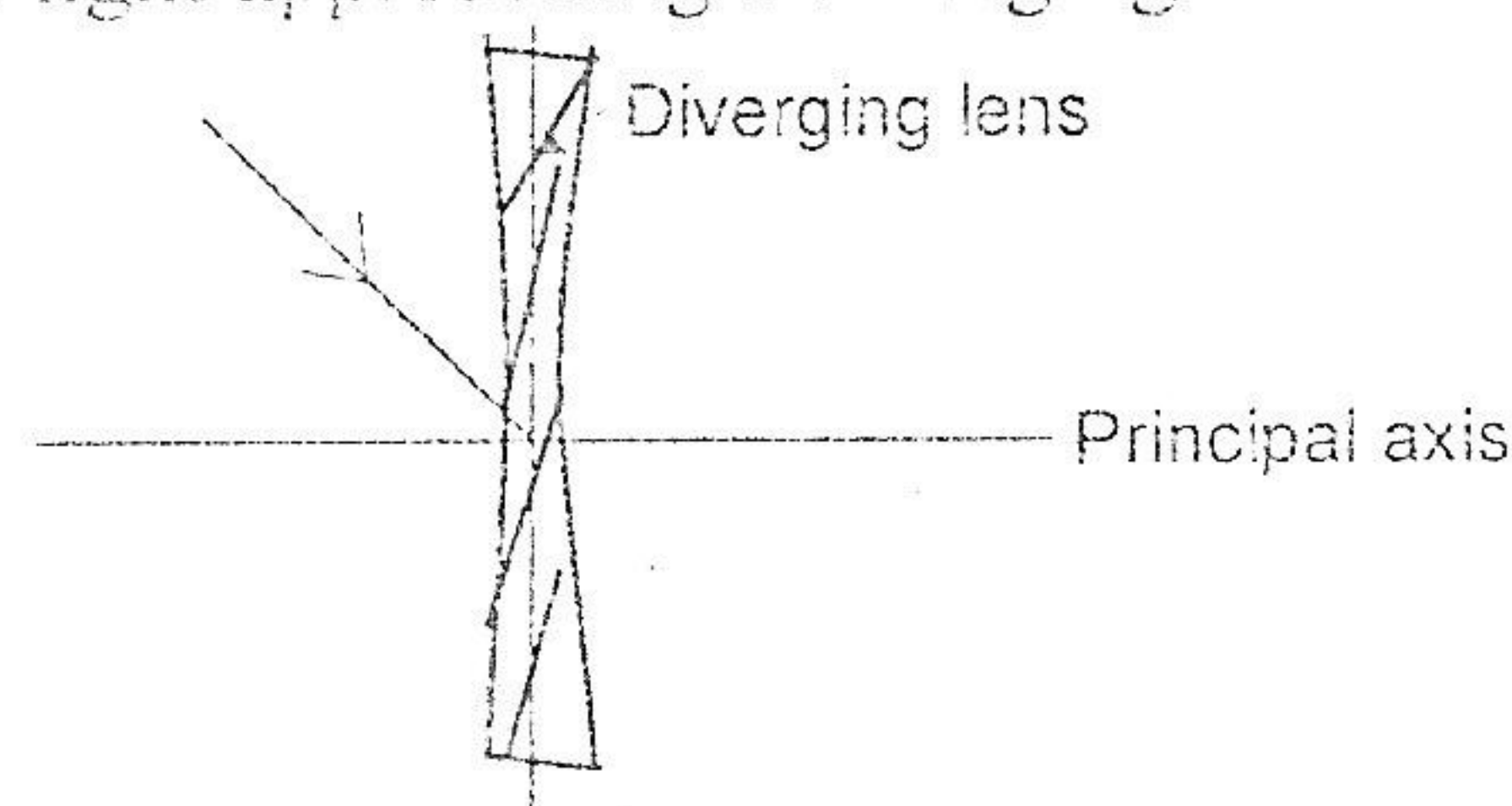


Figure 3

Which of the following diagrams in Figure 4 shows the path of light on passing through the lens?

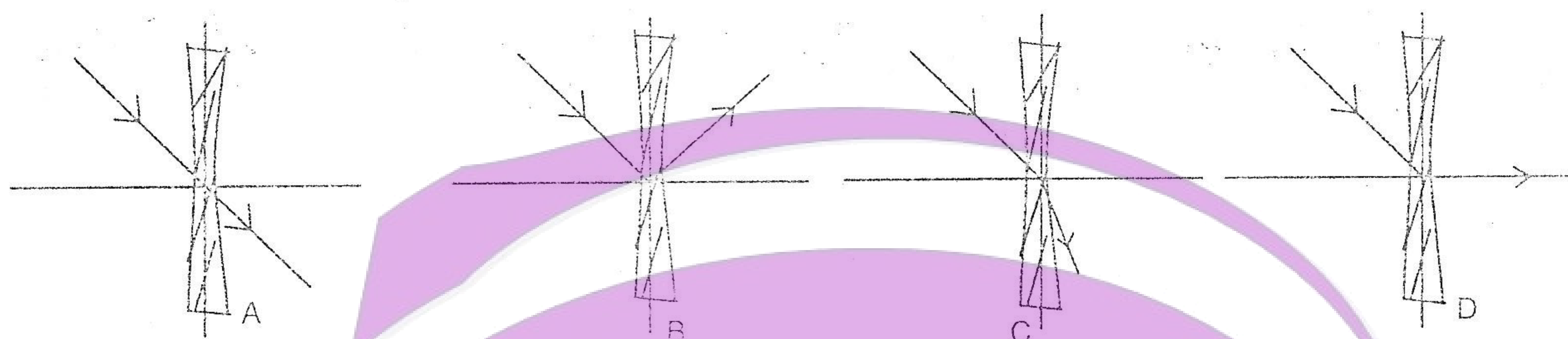
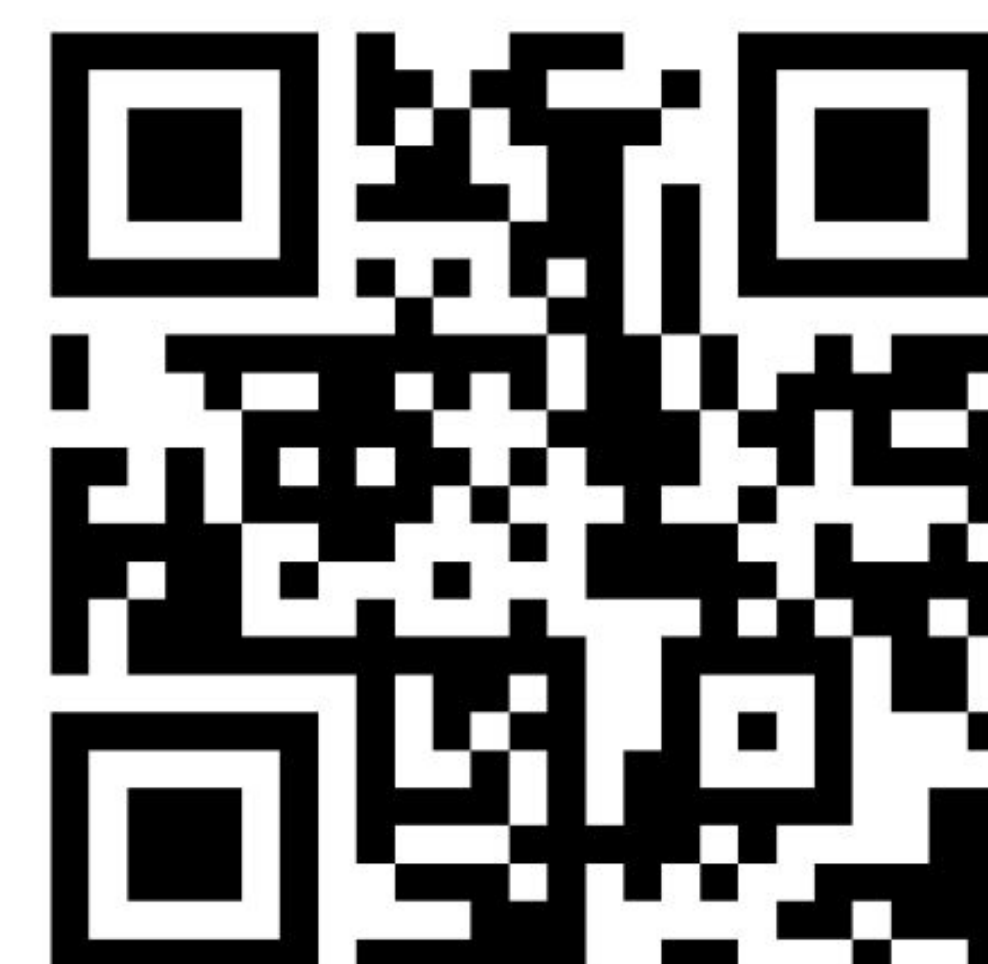


Figure 4

19. When a vibrating system reaches resonance
- its frequency is maximum
 - its frequency is minimum
 - its amplitude is minimum
 - its amplitude is at its maximum
20. When the net force acting on an object is doubled, the acceleration of the object
- Quadruples
 - Doubles
 - Halves
 - remains the same
21. An apple falls from a tree and hits the ground 5.0 m below. If the acceleration due to gravity is 10 m/s^2 , the apple hits the ground with a speed of
- 10 m/s
 - 5 m/s
 - 15 m/s
 - 20 m/s
22. The device that converts chemical energy to electrical energy is
- a battery
 - An a.c generator
 - an electric bulb
 - a microphone
23. The average vibrational speed of molecules in a solid is lower than that in a liquid because
- solid molecules are held together by a strong force
 - solid molecules are closer to each other
 - solid molecules are heavier
 - solid molecules have higher energy
24. Which of the following substances is NOT organic?
- Steel
 - Iron
 - Nickel
 - Sodium

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25. Figure 5 below shows two coils placed near to each other. One is connected to a battery through a switch and the other to a galvanometer.

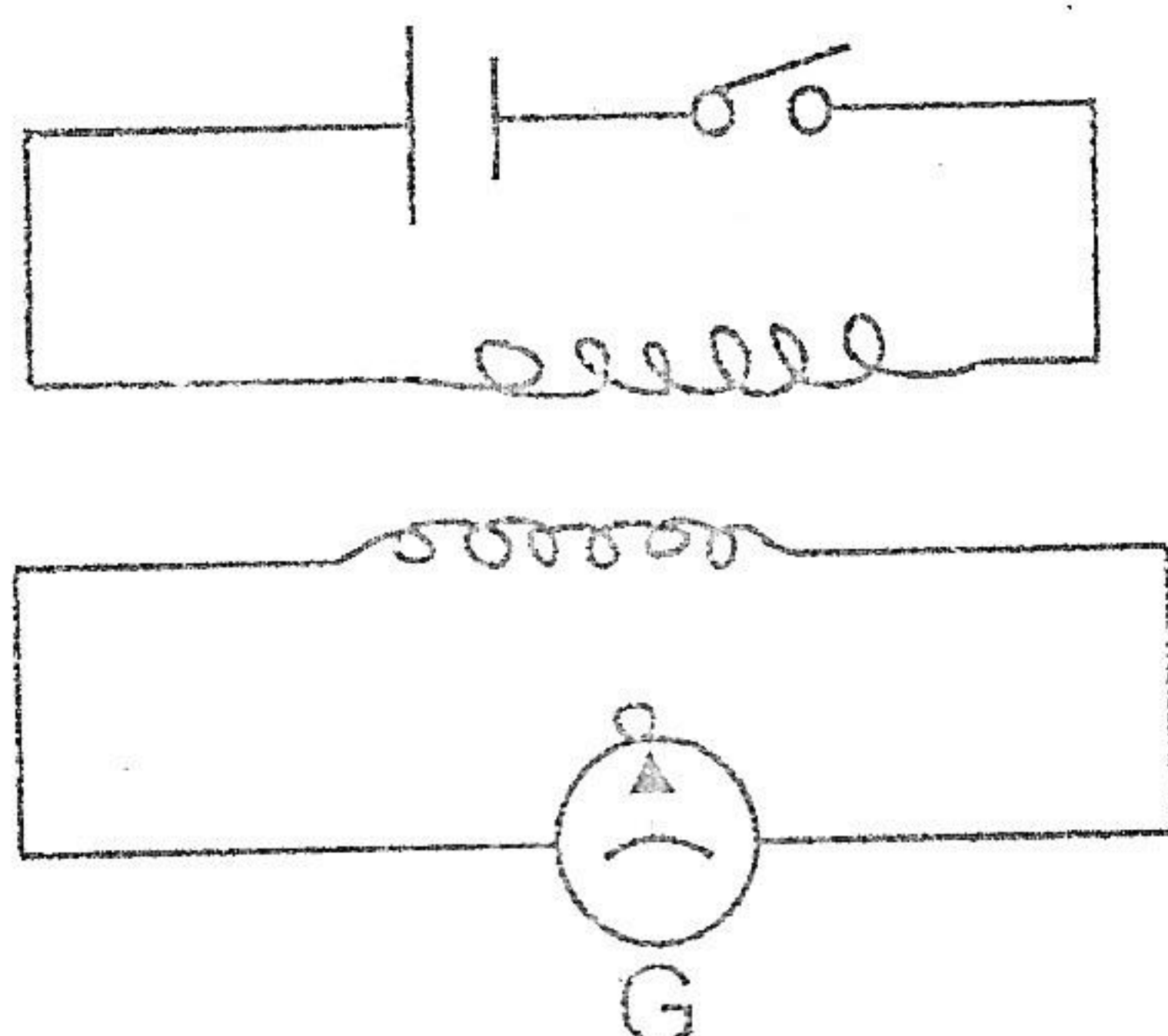


Figure 5

When the switch is closed and kept closed the pointer of the galvanometer

- A registers a momentary deflection and quickly returns to zero
 - B is unaffected
 - C registers a steady deflection to one side
 - D oscillates about the zero point
26. Which of the following is the best order of energy changes taking place in a hydro electric plant?
- A Kinetic – electric – potential
 - B Kinetic – potential – electrical
 - C Potential – electrical – kinetic
 - D Potential – kinetic – electrical
27. Figure 6 below shows two identical charged bodies hanging side by side.

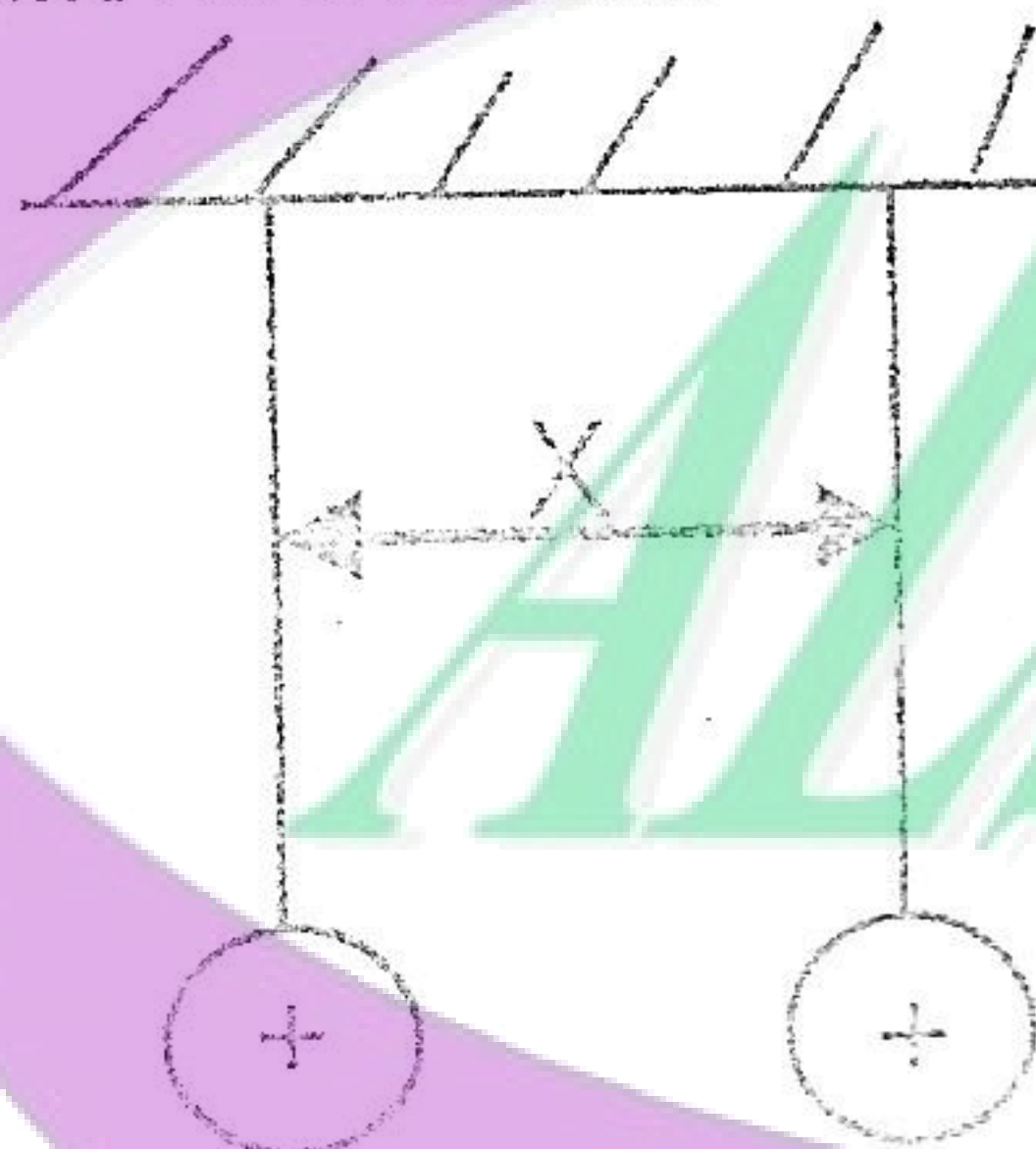


Figure 6

If the distance, x , separating the two bodies is doubled, the force between them

- A Doubles
 - B remains the same
 - C increases
 - D Reduces
28. A hard magnetic material is one that
- A. is difficult to cut with a knife
 - B. easily magnetized and demagnetised
 - C. difficult to magnetise
 - D. easy to magnetise but difficult to demagnetise
29. Which property of light is responsible for the formation of rainbows?
- A Dispersion
 - B Diffraction
 - C Refraction
 - D Reflection



30. A pressure cooker cooks food faster because
 A it causes water to start boiling
 B it causes the water to boil at its maximum temperature of 100°C
 C it causes the water to boil at a temperature higher than 100°C
 D it causes the water to boil at atmospheric pressure
31. In an experiment to demonstrate Brownian motion in gases, what is actually seen is
 A light reflected from randomly moving smoke particles
 B light reflected from randomly moving air particles
 C randomly moving air molecules
 D randomly moving smoke particles

SECTION 2
(4 Questions)

Questions 32 -35

Direction: For each of the questions below, ONE OR MORE of the responses given are correct. Decide which of the responses is (are) correct. Then choose

- A If 1,2 and 3 are correct
 B If 1 and 2 only are correct
 C If 2 and 3 only are correct
 D If 3 only is correct

Summary of instructions

A	B	C	D
1, 2, 3 correct	1, 2 correct	2, 3 correct	3 only correct

32. In a solid
 1 The molecules are closely packed
 2 the molecules are regularly arranged
 3 the force between molecules is very strong
33. A hunter pulls his rubber catapult to shoot a bird (If its elastic limit is not exceeded)
 1 the energy stored in the catapult is kinetic energy
 2 the catapult rubber obeys Hooke's Law
 3 the more he pulls, the further the stone will go when it is released.
34. Which of the following is /are uses of the cathode ray oscilloscope?
 1 Comparing frequencies
 2 Measuring voltages
 3 Displaying wave forms
35. The particles that make up the nucleus of an atom are
 1 electrons and neutrons
 2 electrons and protons
 3 neutrons and protons

SECTION 3
(Seven questions)

Directions:

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The groups of questions deal with practical situations. Each situation is followed by a set of questions. Select the best answer for each question:

Question 36– 38

Figure 7 below shows current from a transformer output directed to a bulb.

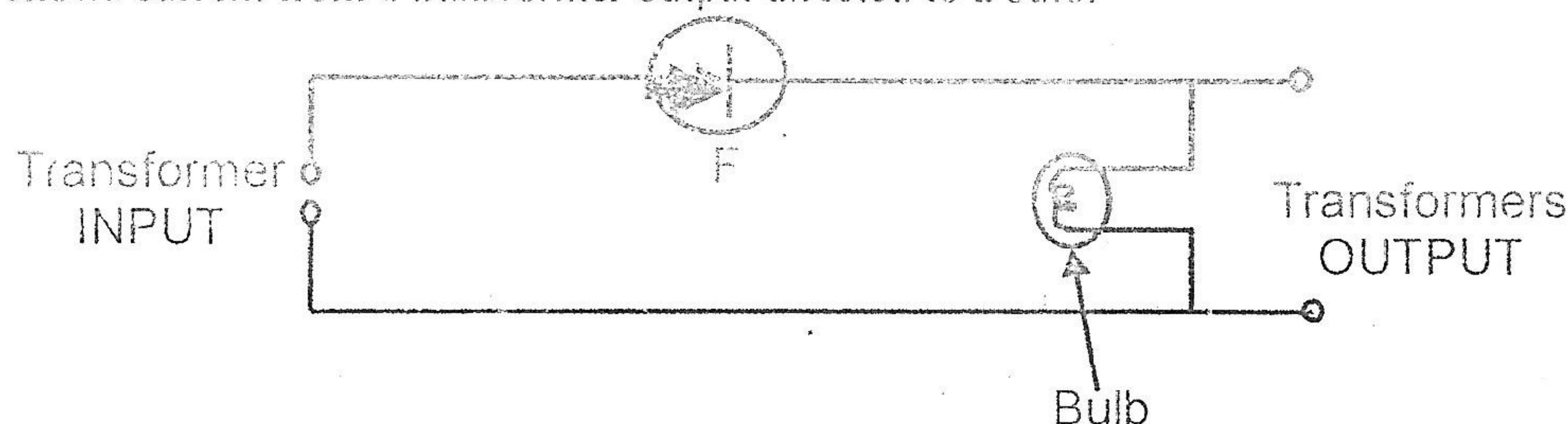


Figure 7



36. Which of these statements is true?
- A The voltage from the transformer is alternating
 - B The current from the transformer is d.c.
 - C The current through the bulb is a.c.
 - D The bulb and F are in parallel.

37. The circuit component F is
- A switch
 - B capacitor
 - C diode
 - D fuse

38. The current through the bulb is
- A stepped down
 - B stepped up
 - C rectified
 - D smoothened

Questions 39 – 42

The graph RSTUV in Fig 8 shows the heating curve for a substance of mass 0.5 kg at its melting point being heated with a heater at a constant rate of 800 J/s.

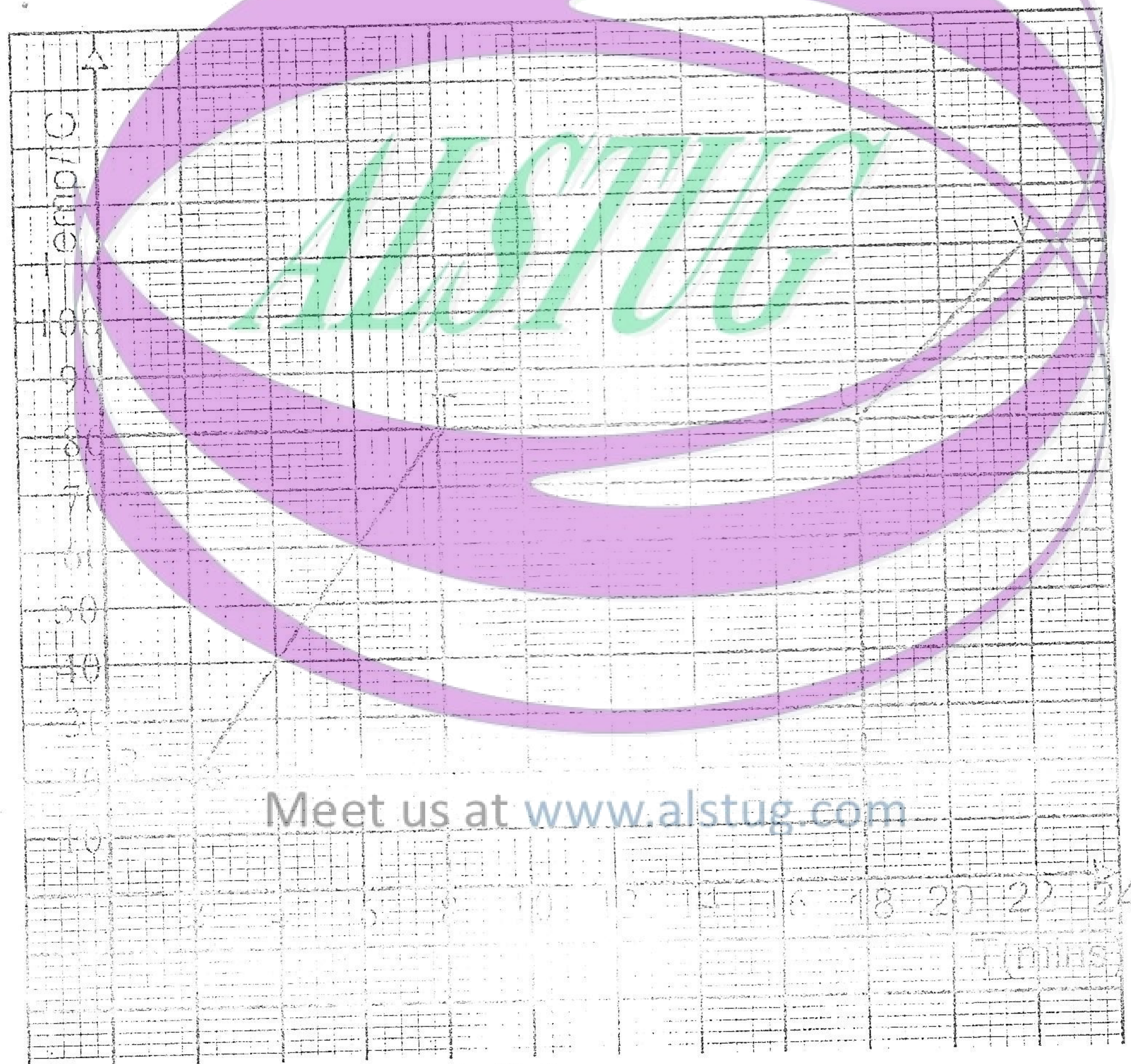


Fig 8

39. In which of the portions is the substance in both the solid and liquid state?
- A RS
 - B ST
 - C TU
 - D UV

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40. The boiling point of the substance is:
- A 100 °C
 - B 80 °C
 - C 60 °C
 - D 20 °C
41. The portion TU is longer than the portion RS because
- A much time is used along TU
 - B liquid expand more than solids
 - C there are more molecules involved
 - D much energy is needed to completely break bonds
42. How much time in minutes was used to heat the liquid only?
- A 2 mins
 - B 8 mins
 - C 6 mins
 - D 10 mins

SECTION 4
(Eight Questions)

Directions:

Each group of questions below consists of four lettered headings followed by a list of numbered questions. For each numbered question, select the one heading which is most closely related to it. Each heading may be used once, more than once or not at all.

Questions 43 – 46

The following graphs in figure 1 show how one physical quantity, y, varies with another, X



Figure 1

Which of the graphs best represents

43. Velocity of a body moving with constant acceleration	time
44. Force between two charged bodies	Separation
45. Volume of a fixed mass of gas	Temperature in kelvin
46. Potential difference across an Ohmic conductor	current flowing in the conductor

Questions 47 – 50

The following are some laws in Physics:-

- A Newton's first law of motion
- B Newton's second law of motion
- C Law of conservation of energy
- D Law of conservation of momentum

Which of them best explains the following:

47. A steel ball gains internal energy when it falls and hits the ground on a tarred road.
48. A passenger in a car jerks forward when the car stops abruptly.
49. As the bullet from a gun moves forward, the gun moves backward.
50. The rate of change of velocity increases in proportion to the force applied on the body.

STOP -GO BACK AND CHECK YOUR WORK

