

PHYSICS 1
0580

GENERAL CERTIFICATE OF EDUCATION BOARD
General Certificate of Education Examination

JUNE 2025

ORDINARY LEVEL

Centre Number	
Centre Name	
Candidate Identification Number	
Candidate Name	

Mobile phones are NOT allowed in the examination room.

MULTIPLE CHOICE QUESTION PAPER

Duration: 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 – 0580 PHYSICS 1"
4. Fill in the information required in the spaces above.
5. Fill in the information required in the spaces provided on the answer sheet using your HB pencil:
Candidate Name, Exam Session, Subject Code and Candidate Identification 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. **Non-programmable Calculators are allowed.**
8. Each question has FOUR suggested answers: **A, B, C** and **D**. Decide which answer is appropriate. 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, draw a horizontal line across **C** as shown below:

[A] [B] **[C]** [D]

9. Select only one answer for each question. If you select 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 select your new answer and draw a horizontal line across it.
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 your rough work in this booklet using the blank spaces in the question booklet.
12. **At the end of the examination, the invigilator shall collect the answer sheet first and then the question booklet. DO NOT LEAVE THE EXAMINATION HALL WITH IT.**

Turn Over

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SECTION 1
(Forty two questions)

Questions 1 – 42

Directions:

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

1. Which of the following quantities is constant for a body falling freely near the earth's surface?

A. Air resistance
B. Acceleration
C. Kinetic energy
D. Linear momentum

2. Anything that can do work is said to possess:

A energy
B force
C efficiency
D power

3. Which of the following electromagnetic waves can be used to detect fake bank notes?

A Gama rays
B Infra-red rays
C Ultra-violet rays
D X-rays

4. The quality of a sound wave is determined by the:

A wavelength
B amplitude
C frequency
D overtones

5. The focal length of a convex lens is 10 cm. When an object is placed 15 cm from the lens, the image formed is:

A real and magnified
B virtual and diminished
C real and diminished
D virtual and magnified

6. Why does alcohol give a cooling effect when poured on a body?

A It evaporates without boiling
B It sends out latent heat of vaporization to the body
C It absorbs latent heat of vaporization from the body
D It has a low boiling point

7. Which of the graphs in Figure 1 shows how the temperature (θ) of a pure melting substance varies with the quantity of heat energy (Q) absorbed by the substance?

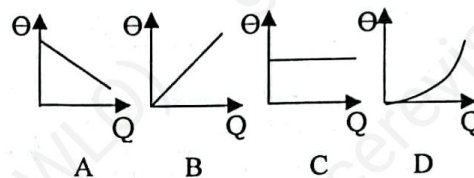


Figure 1

8. Alternating current which has not been rectified is not suitable for:

A charging a car battery
B making an electromagnet
C lighting a filament bulb
D operating a grinding machine

9. Images formed by concave lenses are always:

A virtual
B inverted
C magnified
D real

10. Which of the following quantities has the unit kg m s^{-1} ?

A Density
B Force
C Moment
D momentum

11. Which of these transducers converts light to heat energy?

A Filament bulb
B Solar cell
C Solar panel
D Wind turbine

12. If air is pumped into a ball on a cold day, on a hot day the mass and density will:

	Mass	Density
A	decrease	decrease
B	remains the same	increase
C	remain the same	decrease
D	increase	increase

13. An electrical device is rated 60 W, 240 V. The current drawn by the device when it is operating is:

A 4 A
B 2 A
C 0.5 A
D 0.25 A

14. Which of these fuses is ideal for use in a shaving machine rated 240 V, 1100 W?

A 4 A
B 4.6 A
C 5 A
D 218 A

15. A rifle fires a bullet and recoils. The recoil velocity of the rifle is less than the velocity of the bullet because:

A the recoil velocity is opposite to the velocity of the bullet
B the momentum of the bullet is greater than that of the rifle
C the mass of the rifle is much greater than that of the bullet
D the law of conservation of linear momentum does not hold

16. A razor blade is observed to be used to cut a piece of cloth with more ease than with a knife. This could be explained most precisely by:

A small area of contact and small force exerted
B high pressure and high force exerted
C small area of contact and high pressure exerted
D small force and low pressure exerted

17. A boy lifts a bag of beans with a force of 40 N through a vertical height of 2 m in 4 s. The power developed by the boy is:

A 20 W
B 80 W
C 200 W
D 320 W

18. Which of the following natural occurrences is due to the fact that light travels in a straight line?

A echo
B shadow
C rainbow
D mirage

19. 600 000 J of energy is used to heat 2 kg of water of specific heat capacity $4200 \text{ J kg}^{-1} \text{ K}^{-1}$. The temperature rise produced is:

A 71.4°C
B 96°C
C 192°C
D 1260°C

20. Which of the graphs in figure 2 best shows the relationship between the extension of a spring (y) and the force applied (x) when Hooke's law is obeyed?

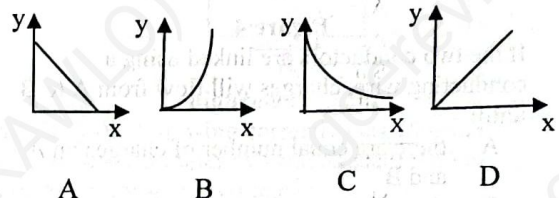


Figure 2

21. Which of the following does NOT affect the speed of sound in air?

A temperature
B pressure
C wind
D humidity

22. How does the conductivity of an intrinsic semiconductor vary with an increase in temperature?

A reduces
B has no effect
C increases
D increases to a stable value

23. Which of the graphs in Figure 3 shows how the resistance (R) of a copper wire of uniform cross-sectional area, varies with its length (l)?

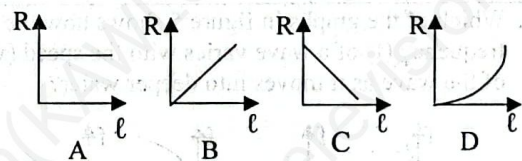


Figure 3

Turn Over

24. If the elastic limit of a wire is not exceeded, then the wire:

- A can store and convert elastic potential energy to other forms of energy
- B obeys Hooke's law
- C can be easily stretched and compressed
- D can be used to measure force

25. Figure 4 shows two charged bodies A and B.

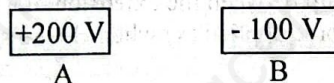


Figure 4

If the two conductors are linked using a conducting wire, charges will flow from A to B until:

- A there are equal number of charges on A and B
- B there is an equal amount of energy on A and B
- C A and B are completely discharged
- D there is no difference in potential between A and B

26. Given that $e = 1.6 \times 10^{-19}$ C, then the number of electrons on a polythene rod which carries a charge of 32 C is:

- A 2×10^{-19}
- B 20×10^{-19}
- C 2×10^{19}
- D 20×10^{19}

27. The mechanical advantage of a machine is 3 and the velocity ratio is 4. What is the efficiency of the machine?

- A 0.75 %
- B 1.33 %
- C 75 %
- D 133 %

28. Which of the graphs in figure 5 shows how the frequency (f) of a wave varies with the speed (v) of the wave as it moves into deeper water?

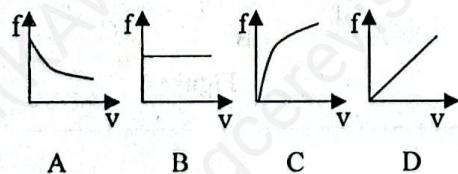


Figure 5

29. The unit of electric current is:

- A ampere
- B coulomb
- C volt
- D ohm

30. Which of the energy sources below is renewable?

- A Sun
- B Coal
- C Petrol
- D Nuclear

31. An object falling from a great height will attain terminal velocity when:

- A no air resistance force acts on it
- B the acceleration is constant
- C no force acts on the body
- D the net force on the body is zero

32. When a rubber catapult is stretched and released, it throws a stone of mass 0.02 kg at a speed of 10 m s^{-1} . The kinetic energy of the stone is:

- A 2 J
- B 1 J
- C 0.2 J
- D 0 J

33. Figure 6 shows a network of two resistors connected to a battery of negligible internal resistance.

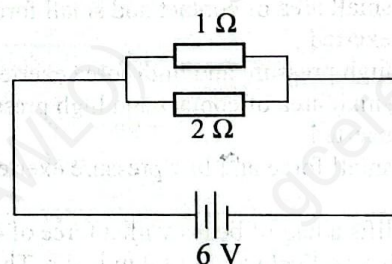


Figure 6

The p.d across the the 2Ω resistor is:

- A 4 V
- B 2 V
- C 5 V
- D 6 V

34. Figure 7 shows a voltage (V) against time (t) graph of an a.c. source.

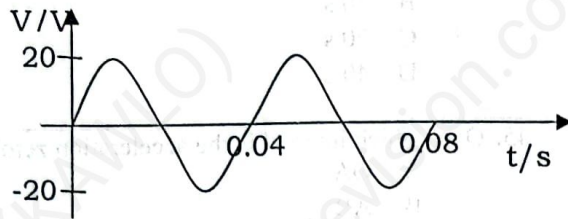


Figure 7

The frequency of the source is:

- A 0.05 Hz
 - B 0.08 Hz
 - C 20 Hz
 - D 25 Hz
35. In cold weather, a piece of iron feels colder than a piece of wood when touched because:
- A iron is at a lower temperature than wood
 - B wood is a better emitter of heat than iron
 - C iron is a better conductor of heat
 - D iron is smooth while wood is rough

36. Figure 8 shows a ray of light reflected by a plane surface.

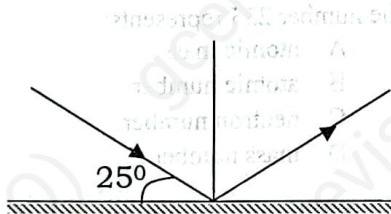


Figure 8

The angle of reflection is:

- A 25°
 - B 50°
 - C 65°
 - D 130°
37. John uses 10 s to lift a box from the floor onto a table while Peter uses 25 s to do the same thing. Which of the following is correct?
- A John does more work than Peter
 - B John does less work than Peter
 - C John has more power than Peter
 - D John has less power than Peter

38. The setting up of a voltage across a wire which is experiencing a change in magnetic flux is called:

- A magnetization
- B induction
- C demagnetization
- D electromagnetic induction

39. Figure 9 shows a simple electric circuit

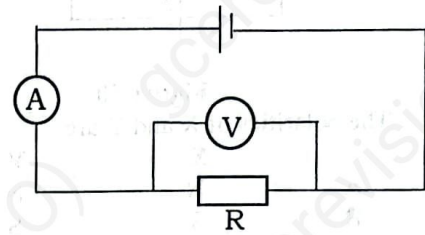


Figure 9

Which of the following correctly classifies the resistor (R), voltmeter (V) and ammeter (A) in order of increasing resistance?

- A Ammeter, voltmeter, resistor
 - B Voltmeter, ammeter, resistor
 - C Resistor, voltmeter, ammeter
 - D Ammeter, resistor, voltmeter
40. Which of the following elements is a semiconducting material?
- A Silicon
 - B Phosphorus
 - C Diode
 - D Filament bulb

41. A woman is treated of a disease in the thyroid gland using radioactive iodine-131. Which device could be used to monitor the progress of the iodine-131?

- A Manometer
- B Thermometer
- C Cathode ray oscilloscope
- D G-M tube

42. Figure 10 shows a coil XY connected to a d.c. supply.

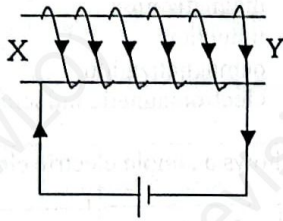


Figure 10

The polarities of X and Y are

	X	Y
A	N	N
B	S	S
C	N	S
D	S	N

SECTION II (Eight Questions)

Directions: This group of questions deals with practical situations. Each situation is followed by a set of questions. Select the best answer for each question.

Questions 43 to 46

The graph in figure 11 carries some information of the motion of a car of mass 1000 kg moving on a straight road. Use the information on the graph to answer questions 43 to 46.

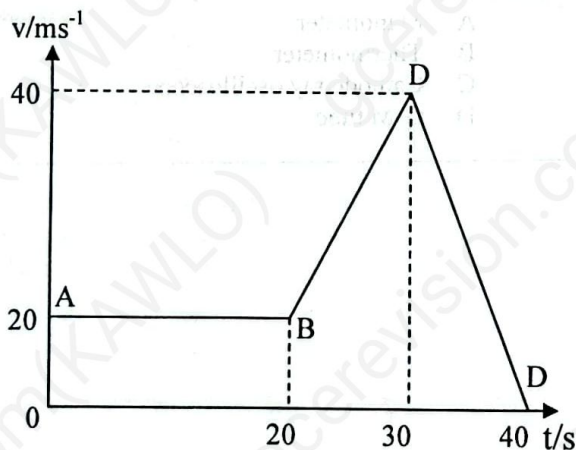


Figure 11

43. The distance covered by the car over the interval represented by AB is?
- A 200 m
B 40 m
C 400 m
D 1 m

44. For how long does the car move with constant velocity during the journey?

A 10 s
B 30 s
C 20 s
D 40 s

45. Over which interval is the acceleration zero?

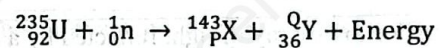
A OA
B AB
C BC
D CD

46. The force necessary to cause the car to come to rest is

A - 4000 N
B - 1000 N
C 1000 N
D 4000 N

Question 47 to 50

The equation below represents a reaction carried out in a nuclear reactor.



47. The number 235 represents:

A atomic mass
B atomic number
C neutron number
D mass number

48. The process described by the equation is:

A chain reaction
B nuclear fission
C nuclear fusion
D Energy generation

49. The value of Q is:

A 92
B 93
C 143
D 236

50. The energy produced results from the:

A change in temperature
B heat energy supplied
C electrical energy generated
D loss in mass

STOP

GO BACK AND CHECK YOUR WORK