

(Group - I)

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

1. One byte is equal to:

- (A) 4 bits (B) 6 bits
(C) 8 bits (D) 10 bits

2. To diagnose the brain tumor, it is used:

- (A) Iodine-131 (B) Phosphorus-32
(C) Cobalt-60 (D) Carbon-14

3. In C.R.O, the potential of grid is:

- (A) positive (B) zero
(C) neutral (D) negative

4. The intensity level of rusting of leaves is:

- (A) 10 dB (B) 20 dB
(C) 30 dB (D) 40 dB

5. The change in the focal length of the eye lens is called:

- (A) modification (B) induction
(C) accommodation (D) distinct vision

6. The formula of e.m.f is:

- (A) $E = \frac{J}{Q}$ (B) $F = \frac{W}{I}$

$$(C) E = \frac{W}{Q}$$

$$(D) E = \frac{Q}{I}$$

7. The principle of working of transformer is:
(A) Self-induction (B) Electromagnetism
(C) Mutual induction (D) Electrostatics
8. In computer terminology, the term machinery refers to:
(A) Software (B) Hardware
(C) Data (D) Procedure
9. The main categories of waves are:
(A) 1 (B) 2
(C) 3 (D) 4
10. Transformer is used to change the value of:
(A) Charge (B) Energy
(C) Power (D) Voltage
11. The unit of capacitance is:
(A) Ampere (B) Farad
(C) Coulomb (D) Volt
12. The unit of sound intensity is:
(A) Wm (B) Wm^{-1}
(C) Wm^2 (D) Wm^{-2}

Physics	10th Lahore Board 2017	Paper: II
Time: 1:45 Hrs.	SUBJECTIVE	Marks: 48

(SECTION - I) (Group - I)

2. Write short answers to any FIVE questions: (2×5)

- i. Define longitudinal waves.
- ii. What do you mean by amplitude?
- iii. Write two uses of ultrasound.

Define pitch.

Define the intensity of sound.

State laws of refraction.

Define sphygmograph and gastroscope.

Define nearsightedness.

Write short answers to any FIVE questions: (2×5=10)

Explain any application of electrostatics.

Explain the variable capacitor with an example.

Define unit of current.

Define Ohm.

If the length of copper wire is 1 m and its diameter is 2 mm, find its resistance.

State right hand rule for straight conductor.

Write two ways to increase the magnetic force.

Write two factors affecting induced e.m.f.

Write short answers to any FIVE questions:

(2×5=10)

Define electronics.

Define thermionic emission.

What do you mean by software?

What is meant by fax machine?

Define information and communication technology.

Define half-life.

Define radioactive isotopes.

What do you mean by carbon dating?

(SECTION-II)

Note: Attempt any TWO questions:

- (a) Write a note on characteristics of sound. (4)
- (b) An object and its image in a concave mirror are of the same height, yet inverted when the

object is 20.0 cm from the mirror. What is the focal length of the mirror? (5)

5 (a) Write down the characteristics of parallel combination of resistors. (4)

(b) A capacitor holds 0.03 Coulombs of charge when fully charged by a 6 volt battery. How much voltage would be required for it to hold 2 Coulombs of a charge? (5)

7 (a) Define NAND gate, draw its symbol and write its truth table. (4)

(b) Cobalt-60 is a radioactive element with half life of 5.25 year. What fraction of the original sample will be left after 26 years? (5)

Physics	10th Lahore Board 2017	Paper: II
Time: 15 min.	OBJECTIVE	Marks: 12

(Group - II)

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

1.1 Which of the following characteristics of the wave is independent of the other:

- (A) Speed (B) Frequency
(C) Amplitude (D) Wavelength

2. For a normal person, audible frequency range for sound wave lies between:

- (A) 10 Hz and 10 KHz (B) 20 Hz and 20 KHz
(C) 25 Hz and 25 KHz (D) 30 Hz and 30 KHz

3. Which form of energy is sound:
- (A) Electrical (B) Mechanical
(C) Thermal (D) Chemical
4. The index of refraction depends on:
- (A) Focal length (B) The speed of light
(C) The image distance (D) The object distance
5. Capacitance is defined as:
- (A) VC (B) $\frac{Q}{V}$
(C) QV (D) $\frac{V}{Q}$
6. An electric current in conductor is due to the flow of:
- (A) Positive ion (B) Negative ion
(C) Positive charges (D) Free electron
7. What is the direction of the magnetic field lines inside a bar magnet:
- (A) From north pole to south pole
(B) From south pole to north pole
(C) From side to side
(D) There are no magnetic field lines
8. The direction of induced e.m.f in circuit is in accordance with conservation of:
- (A) Mass (B) Charge
(C) Momentum (D) Energy
9. The particles emitted from hot cathode surface are:
- (A) Positive ions (B) Negative ions
(C) Protons (D) Electrons
10. In computer terminology information means:
- (A) Any data (B) Raw data
(C) Processed data (D) Large data

11. The brain of any computer system is:
 (A) Monitor (B) Memory
 (C) C.P.U (D) Control unit
12. When Uranium (92 Proton) ejects a beta particle, how many proton will be in the remaining nucleus:
 (A) 89 (B) 90
 (C) 91 (D) 93

Physics	10th Lahore Board 2017	Paper: II
Time: 1: 45 Hrs.	SUBJECTIVE	Marks: 48

(SECTION - I) (Group - II)

2. Write short answers to any FIVE questions:

(2×5=10)

- i. Define simple pendulum and write the formula of its time period.
- ii. Write two characteristics of simple harmonic motion.
- iii. Calculate the frequency of sound wave of speed 340 ms^{-1} and wavelength 0.5 m .
- iv. Name the two characteristics of sound.
- v. Differentiate between frequency and pitch.
- vi. State laws of reflection.
- vii. What is difference between concave and convex lens?
- viii. Define critical angle.

3. Write short answers to any FIVE questions: (2×5=10)

- i. Define the unit of electric field intensity.
- ii. Write any two characteristics of electric field lines.
- iii. What is meant by electromotive force?
- iv. State Joule's law.
- v. What is difference between a cell and a battery?

- vi. Define electromagnet.
- vii. State Lenz's law.
- viii. Which device is used for converting electrical energy into mechanical energy and at what principle it works?
4. Write short answers to any FIVE questions: (2×5=10)
- i. Define thermionic emission.
- ii. Differentiate between digital and analogue quantities.
- iii. Construct truth table of AND gate.
- iv. Differentiate between RAM and ROM.
- v. Write two advantages of e-mail.
- vi. Define data.
- vii. Define fission reaction.
- viii. Write two uses of radio-isotopes.

(SECTION-II)

Note: Attempt any TWO questions:

5. (a) How can you define the term wave motion? Also elaborate the difference between mechanical waves and electromagnetic waves with suitable examples. (4)
- (b) An object 30 cm tall is located 10.5 cm from a concave mirror with focal length 16 cm. (5)
- (i) Where is the image located? (ii) How high is it?
6. (a) What are the possible combination of resistors in a circuit? (4)
- (b) Two capacitor of capacitances 12 μF and 6 μF are connected in parallel with a 12 V battery. Find the equivalent capacitance of the combination. Find the charge and the potential

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- difference across each capacitor. (5)
- (a) Draw the circuit diagrams and AND operation and OR operation and also write the truth tables of both these operations. (4)
- (b) The activity of a sample of a radioactive bismuth decrease to one-eighth of its original activity in 15 days. Calculate the half-life of the sample. (5)