BOARD OF INTERMEDIATE AND SECONDARY EDUCATION,MULTAN.

OBJECTIVE KEY FOR INTERMEDIATE Supply... ANNUAL EXAMINATION,202...

(169)

Name of Subject: Physics II

Q. Nos	Paper Code 4471	Correct Anwser	Paper Code 4473	Correct Anwser	Paper Code 4475	Correct Anwser	Paper Code 4477	Correct Anwser
1	A	1.6×10^{-19} J	A	γ-rays	D	Capacitor	B	$\mu_0 n I$
2	C	Four Times	D	1.66×10^{-27} kg	A	0°	C	Grid
3	D	Charge	B	$m=\left(\frac{er}{2v}\right)B$	B	Zero	C	Energy
4	B	$\mu_0 n I$	A	1.6×10^{-19} J	D	10^{-9} S	C	Henery
5	C	Grid	C	Four Times	C	10^{5}	D	Capacitor
6	C	Energy	D	Charge	B	Wavelength	A	0°
7	C	Henery	B	$\mu_0 n I$	D	Interference	B	Zero
8	D	Capacitor	C	Grid	A	γ-rays	D	10^{-9} S
9	A	0°	C	Energy	D	1.66×10^{-27} kg	C	10^{5}
10	B	Zero	C	Henery	B	$m=\left(\frac{er}{2v}\right)B^2$	B	Wavelength
11	D	10^{-9} S	D	Capacitor	A	1.6×10^{-19} J	D	Interference
12	C	10^{5}	A	0°	C	Four Times	A	γ-rays
13	B	Wavelength	B	Zero	D	Charge	D	1.66×10^{-27} kg
14	D	Interference	D	10^{-9} S	B	$\mu_0 n I$	B	$m=\left(\frac{er}{2v}\right)B^2$
15	A	γ-rays	C	10^{5}	C	Grid	A	1.6×10^{-19} J
16	D	1.66×10^{-27} kg	B	Wavelength	C	Energy	C	Four Times
17	B	$m=\left(\frac{er}{2v}\right)B^2$	D	Interference	C	Henery	D	Charge
18								
19								
20								

سرٹیفکیٹ بابت تصحیح سوالیہ پرچہ/مارکنگ Key

ہم نے مضمون Physics پرچہ II گروپ X انٹرمیڈیٹ Supply امتحان 2022ء کا سوالیہ پرچہ انشائیہ ومعروضی (Subjective & Objective) کو بنظر عمیق چیک کرلیا ہے یہ پرچہ Syllabus کے عین مطابق Set کیا گیا ہے۔ اس سوالیہ پرچہ میں کسی قسم کی کوئی غلطی نہ ہے۔ ہم نے سوالیہ پرچہ کا اردو اور انگریزی Version بھی چیک کرلیا ہے۔ یہ Version آپس میں مطابقت رکھتے ہیں۔ نیز اس پرچہ کی معروضی (MCQs) Key کی بابت تصدیق کی جاتی ہے کہ اس میں بھی کسی قسم کی کوئی غلطی نہ ہے۔ مزید یہ کہ ہم نے Key بنانے سے متعلق دفتر کی جانب سے تیار کردہ ہدایات وصول کرکے ان کا بغور مطالعہ کرلیا ہے اور ان کی روشنی میں Key بنائی ہے۔ نیز سب ایگزامینرز کیلئے تفصیلی مارکنگ ہدایات / مارکنگ سکیم/Rubrics بھی تیار کردی گئی ہیں۔

Prepared & Checked By:

Dated: 13-12-2022

S.#	Name	Designation	Institution	Mobile No	Signature
1	Kaleem Ullah	Associate Prof	Govt. Science College Multan	0301-7400172	
2	Shahid Iqbal	Assoc. Prof	Govt. graduate college Qasim Bela	03077360030	
3	Abdul Ghani Ansari	Assistant Professor	Govt. A.H.G. College Multan	0305-8438895	
4	Rechecked By				
5	Bashir Ahmad	Associate Professor	Govt. Millat College Multan	0300 6305057	

14-12-22 تاریخ

Paper Code Number: 4471	2022 (2^{nd}-A) INTERMEDIATE PART-II (12^{th} CLASS)	Roll No. 163

PHYSICS PAPER-II

TIME ALLOWED: 20 Minutes
MAXIMUM MARKS: 17

OBJECTIVE

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 bubble in front of that question number, on bubble sheet. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question. No credit will be awarded in case BUBBLES are not filled. Do not solve question on this sheet of OBJECTIVE PAPER.

Q.No.1

(1) One electron volt is equal to:
(A) $1.6 \times 10^{-19} J$ (B) $1.6 \times 10^{+19} J$ (C) $1.6 \times 10^{-18} J$ (D) $1.6 \times 10^{+18} J$

(2) If the distance between the two charged bodies is halved the electric force between them becomes:
(A) Doubled (B) Half (C) Four times (D) One fourth

(3) Kirchhoff's first rule is the manifestation of law of conservation:
(A) Mass (B) Energy (C) Momentum (D) Charge

(4) The formula for magnetic field due to a solenoid is given by:
(A) $\mu_0 I$ (B) $\mu_0 nI$ (C) $\mu_0 NI$ (D) $\mu_0 n\ell$

(5) The number of electrons in CRO is controlled by:
(A) X – Deflecting plates (B) Y – Deflecting plates (C) Grid (D) Filament

(6) Lenz's law is in accordance with law of conservation of:
(A) Momentum (B) Charge (C) Energy (D) Angular Momentum

(7) S.I unit of self inductance:
(A) Weber (B) Tesla (C) Henery (D) Farad

(8) Direct current cannot flow through:
(A) Inductor (B) Resistor (C) Transistor (D) Capacitor

(9) In an A.C circuit with Resistor only, the current and voltage have a phase (angle) of:
(A) 0^o (B) 180^o (C) 90^o (D) 60^o

(10) Young's modulus for water is:
(A) 1 (B) Zero (C) 2 (D) 3

(11) A Photo Diode can turn its current ON and Off in:
(A) $10^{-3} s$ (B) $10^{-6} s$ (C) $10^{-12} s$ (D) $10^{-9} s$

(12) The open loop gain of the amplifier is order of:
(A) 10^2 (B) 10^8 (C) 10^5 (D) 10^{12}

(13) When a photon collides with an electron which of following of photon increase:
(A) Frequency (B) Wavelength (C) Mass (D) Energy

(14) Wave nature of light appears in:
(A) Pair production (B) Compton effect (C) Photoelectric effect (D) Interference

(15) X – rays are similar in nature to:
(A) γ – rays (B) β – rays (C) α – rays (D) Cathode rays

(16) One a.m.u is equal to:
(A) $1.66 \times 10^{-24} kg$ (B) $1.66 \times 10^{-19} kg$ (C) $1.66 \times 10^{-34} kg$ (D) $1.66 \times 10^{-27} kg$

(17) By mass spectrograph we can find the value of mass by using formula:
(A) $m = \left(\frac{e^2 r^2}{2v}\right) B^2$ (B) $m = \left(\frac{er^2}{2v}\right) B^2$ (C) $m = \left(\frac{ev}{2r^2}\right) B$ (D) $m = \left(\frac{ev^2}{2r}\right) B$

Paper Code Number: 4473	2022 (2^{nd}-A) INTERMEDIATE PART-II (12^{th} CLASS)	Roll No. 164

PHYSICS PAPER-II

TIME ALLOWED: 20 Minutes
MAXIMUM MARKS: 17

OBJECTIVE

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 bubble in front of that question number, on bubble sheet. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question. No credit will be awarded in case BUBBLES are not filled. Do not solve question on this sheet of OBJECTIVE PAPER.

Q.No.1

(1) X – rays are similar in nature to:
(A) γ – rays (B) β – rays (C) α – rays (D) Cathode rays

(2) One a.m.u is equal to:
(A) $1.66 \times 10^{-24} kg$ (B) $1.66 \times 10^{-19} kg$ (C) $1.66 \times 10^{-34} kg$ (D) $1.66 \times 10^{-27} kg$

(3) By mass spectrograph we can find the value of mass by using formula:
(A) $m = \left(\frac{e^2 r^2}{2v}\right) B^2$ (B) $m = \left(\frac{er^2}{2v}\right) B^2$ (C) $m = \left(\frac{ev}{2r^2}\right) B$ (D) $m = \left(\frac{ev^2}{2r}\right) B$

(4) One electron volt is equal to:
(A) $1.6 \times 10^{-19} J$ (B) $1.6 \times 10^{+19} J$ (C) $1.6 \times 10^{-18} J$ (D) $1.6 \times 10^{+18} J$

(5) If the distance between the two charged bodies is halved the electric force between them becomes:
(A) Doubled (B) Half (C) Four times (D) One fourth

(6) Kirchhoff's first rule is the manifestation of law of conservation:
(A) Mass (B) Energy (C) Momentum (D) Charge

(7) The formula for magnetic field due to a solenoid is given by:
(A) $\mu_0 I$ (B) $\mu_0 nI$ (C) $\mu_0 NI$ (D) $\mu_0 n\ell$

(8) The number of electrons in CRO is controlled by:
(A) X – Deflecting plates (B) Y – Deflecting plates (C) Grid (D) Filament

(9) Lenz's law is in accordance with law of conservation of:
(A) Momentum (B) Charge (C) Energy (D) Angular Momentum

(10) S.I unit of self inductance:
(A) Weber (B) Tesla (C) Henery (D) Farad

(11) Direct current cannot flow through:
(A) Inductor (B) Resistor (C) Transistor (D) Capacitor

(12) In an A.C circuit with Resistor only, the current and voltage have a phase (angle) of:
(A) 0^o (B) 180^o (C) 90^o (D) 60^o

(13) Young's modulus for water is:
(A) 1 (B) Zero (C) 2 (D) 3

(14) A Photo Diode can turn its current ON and Off in:
(A) $10^{-3} s$ (B) $10^{-6} s$ (C) $10^{-12} s$ (D) $10^{-9} s$

(15) The open loop gain of the amplifier is order of:
(A) 10^2 (B) 10^8 (C) 10^5 (D) 10^{12}

(16) When a photon collides with an electron which of following of photon increase:
(A) Frequency (B) Wavelength (C) Mass (D) Energy

(17) Wave nature of light appears in:
(A) Pair production (B) Compton effect (C) Photoelectric effect (D) Interference

Paper Code Number: 4475	2022 (2^{nd}-A) INTERMEDIATE PART-II (12^{th} CLASS)	Roll No. 165

PHYSICS PAPER-II

TIME ALLOWED: 20 Minutes
MAXIMUM MARKS: 17

OBJECTIVE

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 bubble in front of that question number, on bubble sheet. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question. No credit will be awarded in case BUBBLES are not filled. Do not solve question on this sheet of OBJECTIVE PAPER.

Q.No.1

(1) Direct current cannot flow through:

(A) Inductor (B) Resistor (C) Transistor (D) Capacitor

(2) In an A.C circuit with Resistor only, the current and voltage have a phase (angle) of:

(A) 0^o (B) 180^o (C) 90^o (D) 60^o

(3) Young's modulus for water is:

(A) 1 (B) Zero (C) 2 (D) 3

(4) A Photo Diode can turn its current ON and Off in:

(A) $10^{-3}s$ (B) $10^{-6}s$ (C) $10^{-12}s$ (D) $10^{-9}s$

(5) The open loop gain of the amplifier is order of:

(A) 10^2 (B) 10^8 (C) 10^5 (D) 10^{12}

(6) When a photon collides with an electron which of following of photon increase:

(A) Frequency (B) Wavelength (C) Mass (D) Energy

(7) Wave nature of light appears in:

(A) Pair production (B) Compton effect (C) Photoelectric effect (D) Interference

(8) X – rays are similar in nature to:

(A) γ – rays (B) β – rays (C) α – rays (D) Cathode rays

(9) One a.m.u is equal to:

(A) $1.66 \times 10^{-24} kg$ (B) $1.66 \times 10^{-19} kg$ (C) $1.66 \times 10^{-34} kg$ (D) $1.66 \times 10^{-27} kg$

(10) By mass spectrograph we can find the value of mass by using formula:

(A) $m = \left(\frac{e^2 r^2}{2v}\right) B^2$ (B) $m = \left(\frac{er^2}{2v}\right) B^2$ (C) $m = \left(\frac{ev}{2r^2}\right) B$ (D) $m = \left(\frac{ev^2}{2r}\right) B$

(11) One electron volt is equal to:

(A) $1.6 \times 10^{-19} J$ (B) $1.6 \times 10^{-19} J$ (C) $1.6 \times 10^{-18} J$ (D) $1.6 \times 10^{+18} J$

(12) If the distance between the two charged bodies is halved the electric force between them becomes:

(A) Doubled (B) Half (C) Four times (D) One fourth

(13) Kirchhoff's first rule is the manifestation of law of conservation:

(A) Mass (B) Energy (C) Momentum (D) Charge

(14) The formula for magnetic field due to a solenoid is given by:

(A) $\mu_0 I$ (B) $\mu_0 nI$ (C) $\mu_0 NI$ (D) $\mu_0 n\ell$

(15) The number of electrons in CRO is controlled by:

(A) X – Deflecting plates (B) Y – Deflecting plates (C) Grid (D) Filament

(16) Lenz's law is in accordance with law of conservation of:

(A) Momentum (B) Charge (C) Energy (D) Angular Momentum

unit of self inductance:

er (B) Tesla (C) Henery (D) Farad

Paper Code Number: 4477

2022 (2^{nd}-A) Roll No. 166

INTERMEDIATE PART-II (12^{th} CLASS)

PHYSICS PAPER-II

TIME ALLOWED: 20 Minutes
MAXIMUM MARKS: 17

OBJECTIVE

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 bubble in front of that question number, on bubble sheet. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question. No credit will be awarded in case BUBBLES are not filled. Do not solve question on this sheet of OBJECTIVE PAPER.

Q.No.1

(1) The formula for magnetic field due to a solenoid is given by:

(A) $\mu_0 I$ (B) $\mu_0 nI$ (C) $\mu_0 NI$ (D) $\mu_0 n\ell$

(2) The number of electrons in CRO is controlled by:

(A) X – Deflecting plates (B) Y – Deflecting plates (C) Grid (D) Filament

(3) Lenz's law is in accordance with law of conservation of:

(A) Momentum (B) Charge (C) Energy (D) Angular Momentum

(4) S.I unit of self inductance:

(A) Weber (B) Tesla (C) Henery (D) Farad

(5) Direct current cannot flow through:

(A) Inductor (B) Resistor (C) Transistor (D) Capacitor

(6) In an A.C circuit with Resistor only, the current and voltage have a phase (angle) of:

(A) 0^o (B) 180^o (C) 90^o (D) 60^o

(7) Young's modulus for water is:

(A) 1 (B) Zero (C) 2 (D) 3

(8) A Photo Diode can turn its current ON and Off in:

(A) $10^{-3}s$ (B) $10^{-6}s$ (C) $10^{-12}s$ (D) $10^{-9}s$

(9) The open loop gain of the amplifier is order of:

(A) 10^2 (B) 10^8 (C) 10^5 (D) 10^{12}

(10) When a photon collides with an electron which of following of photon increase:

(A) Frequency (B) Wavelength (C) Mass (D) Energy

(11) Wave nature of light appears in:

(A) Pair production (B) Compton effect (C) Photoelectric effect (D) Interference

(12) X – rays are similar in nature to:

(A) γ – rays (B) β – rays (C) α – rays (D) Cathode rays

(13) One a.m.u is equal to:

(A) $1.66 \times 10^{-24} kg$ (B) $1.66 \times 10^{-19} kg$ (C) $1.66 \times 10^{-34} kg$ (D) $1.66 \times 10^{-27} kg$

(14) By mass spectrograph we can find the value of mass by using formula:

(A) $m = \left(\frac{e^2 r^2}{2v}\right) B^2$ (B) $m = \left(\frac{er^2}{2v}\right) B^2$ (C) $m = \left(\frac{ev}{2r^2}\right) B$ (D) $m = \left(\frac{ev^2}{2r}\right) B$

(15) One electron volt is equal to:

(A) $1.6 \times 10^{-19} J$ (B) $1.6 \times 10^{+19} J$ (C) $1.6 \times 10^{-18} J$ (D) $1.6 \times 10^{+18} J$

(16) If the distance between the two charged bodies is halved the electric force between them becomes:

(A) Doubled (B) Half (C) Four times (D) One fourth

(17) Kirchhoff's first rule is the manifestation of law of conservation:

(A) Mass (B) Energy (C) Momentum (D) Charge

2022 (2^{nd}-A) Roll No: _____ (16)

INTERMEDIATE PART-II (12^{th} CLASS)

PHYSICS PAPER-II TIME ALLOWED: 2.40 Hours

SUBJECTIVE MAXIMUM MARKS: 68

NOTE: Write same question number and its part number on answer book, as given in the question paper.

SECTION-I

2. Attempt any eight parts. **8 × 2 = 16**

(i) Does polarization of dielectric is possible without electric field? Explain.
(ii) On what factors, the energy stored in a capacitor depends?
(iii) The potential is constant throughout a given region of space. Is the electric field zero or non zero?
(iv) Describe the force or forces on a positive charge when placed between parallel plates with similar and equal charge. Explain your answer with diagram.
(v) What will be change in magnetic field inside the solenoid if the length and current is doubled?
(vi) How synchronization is possible in Cathode Ray Oscilloscope?
(vii) Why the voltmeter should have a very high resistance?
(viii) Why does the picture on a TV screen become distorted when a magnet is brought near the screen?
(ix) What factors make a fusion reaction difficult to achieve (any two)?
(x) What do you mean by the term critical mass?
(xi) Does it possible to separate the isotopes of an element by chemical method? Explain.
(xii) Why the element iron is most stable than all other elements?

3. Attempt any eight parts. **8 × 2 = 16**

(i) Is the filament resistance lower or higher in a 500 Watt, 220V light bulb than a 100 Watt, 220V bulb?
(ii) Do bends in a wire affect its electrical resistance? Explain.
(iii) Define temperature coefficient of resistance and also give its unit.
(iv) What is meant by F.M and A.M?
(v) A sinusoidal current has rms value of 10A. What is its peak value?
(vi) Explain power factor.
(vii) What is superconductor?
(viii) Differentiate between paramagnetic and diamagnetic material.
(ix) Define retantivity and coercivity.
(x) Write any two characteristics of operational amplifier.
(xi) Why charge carriers are not present in depletion region?
(xii) The anode of the diode is 0.2V positive with respect to its cathode, is it forward biased?

4. Attempt any six parts. **6 × 2 = 12**

(i) The Lenz's law is also a statement of law of conservation of energy. Explain.
(ii) Does the induced e.m.f in a circuit depend on the resistance of the circuit?
Does the induced current depend on the resistance of the circuit?
(iii) Can a DC motor be turned into a DC generator? What changes are required to be done?
(iv) Write down four factors on which the mutual inductance depends.
(v) What happens to total radiation from a black body if its absolute temperature is doubled?
(vi) Is it possible to create a single electron from energy? Explain.
(vii) Prove that the rest mass energy of an electron is 0.511 MeV.
(viii) How can you prove that the electron can never be found inside of a nucleus?
(ix) What do we mean when we say that the atom is excited?

SECTION-II

NOTE: Attempt any three questions. **3 × 8 = 24**

5.(a) Define electric flux and find electric field intensity due to an infinite sheet of charge. 5
(b) The potential difference between the terminals of a battery in open circuit is 2.2V. When it is connected across a resistance of 5Ω, the potential falls to 1.8V. Calculate current and internal resistance of the battery. 3

6.(a) Derive an expression for energy and energy stored in an inductor? 5
(b) A coil of $0.1m \times 0.1m$ and 200 turns carrying a current $1.0\,mA$ is placed in a uniform magnetic field of 0.1 T. Calculate the maximum torque that acts on the coil. 3

7.(a) Explain how n-p-n transistor can be used as amplifier. Derive the expression for its voltage gain. 5
(b) What is the resonance frequency of a circuit which includes a coil of inductance 2.5H and a capacitance $40\,\mu F$? 3

8.(a) Distinguish between intrinsic and extrinsic semi conductors. How would you obtain n-type and p-type material from pure silicon. Illustrate by schematic diagram. 5
(b) What is the mass of 70kg man in space rocket travelling at 0.8C from us as measured from earth? 3

9.(a) What is radioactivity? Explain the nuclear transmutation. 5
(b) What is the energy in eV of quanta of wavelength of 400 nm? 3