PART - II 21/01 (OBJECTIVE PART)	Ans	swer S	Sheet	No. PHYSI	CS	(GROUP -I)	(Sm	art Syllabus)		Roll No.				
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PHYSICS (GROUP —I) (INTERMEDIATE)	Sign. 1	Dy. St	ıpdnı	. Fi	ctitio	us Roll No. (For Of	fice l	Jse)		Sign. Candidate				
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DEJECTIVE PART) (ΦΦΦ) Time : 20 Minutes Time :				(311001 1)	(11		Y							
will result in loss of marks. All questions are to be attempted. Each question has four possible answers. Tick (√) the correct answer. (17) 1 Compton shift in wave length (Δλ) is zero, when the scattered angle of photon is; A 0° B 45° C 90° D 180° 2 The number of photo electrons depends upon; A Wave length of light light frequency of light of light of light frequency. 3 Production of x-rays can be regarded as the inverse of; A Compton B Pair of Photo-electric of effect production of seffect production of the seffect production of feffect production f	•		,	PART)	((0000)	,							
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PHYSICS (Group-I)

21/01

(Smart Syllabus)

PAPER: PART-II

INTERMEDIATE

MARKS: 68

TIME: 2:40 Hours

2-

ix

9

b

difficult to achieve?

(SUBJECTIVE PART)

Note:- Attempt any TWENTY TWO (22) short questions in all selecting eight from Q. 2 and Q. 3

each and six from Q. 4.

ATK-21

 $(22 \times 2 = 44)$

SECTION – I
Write short answers of any eight parts.

 $(2 \times 8 = 16)$

(05)

(03)

	THE BROLD WILD TO BE WILL COME		(=)				
i	Define potential gradient and give its SI Units.	ii	What is dielectric co-efficient write it in mathematical form.				
iii	Describe the force or forces on a positive point charge when placed between parallel plates. i. With similar and equal charges. ii. With opposite and equal charges.	iv	Suppose that a charge q is moving in a uniform magnetic field with a velocity v, why is there no work done by the magnetic force that acts on the charge.				
٧	Differentiate between magnetic flux and flux density.	vi	Write any two characteristics of electric field lines.				
vii	How can you use a magnetic field to separate isotopes of chemical element?	viii	Write uses of CRO.				
ix	State Faraday's Law and write its mathematical form.	x	Does the induced emf always act to decrease the magnetic flux through a circuit?				
хi	Is it possible to change both the area of the loop and the magnetic field passing through loop and still not have an induced emf in the loop?	xii	Define self induction. Write its formula and SI Unit.				
3-	Write short answers of any eight parts. $(2 \times 8 = 16)$						
	Why does the resistance of a conductor		Explain why the terminal potential difference of a				

Why does the resistance of a conductor battery decreases when the current drawn from it Ħ rise with temperature? is increased. Write four properties of parallel resonance Define temperature coefficient of iii circuit. resistance and write its formula. How many times per second will an incandescent A sinusoidal current has rms value of 10A. Lamp reach maximum brilliance? When ٧ What is the maximum or peak value? connected to a 50Hz source. Distinguish between intrinsic and extrinsic semi What are ductile substances give its two viii Vii conductor. examples. Define modulus of elasticity. Show that the Why a photo diode is operated in a reverse unit of modulus of elasticity and stress are X ix biased state. the same. What is photo diode? Write down its any two Why charge carriers are not present in the depletion region? xii Xi applications.

 $(2 \times 6 = 12)$ 4-Write short answers of any six parts. Show that as the temperature of a material Which has lower energy quanta? Radio waves or ii i is increased, the emitted radiation X-rays? becomes richer in shorter wavelengths. We do not notice the de Broglie How X-rays cause damage to living tissues? wavelength for a pitched cricket ball. iii Explain why? Discuss the emission of γ -radiation from a What are the advantages of laser over vi V ordinary light? radioactive nucleus in short. What information is revealed by the length and How a stable element can be made shape of the tracks of an incident particle in Wilson cloud chamber? viii vii radioactive? What factors make a fusion reaction

SECTION - II

Not	te:-	Attempt any three questions. $(8 \times 3 = 24)$	* ,
5	a	State the Kirchhoff's rules and explain Kirchhoff's voltage rule.	(05)
J	b	A particle having a charge of 20 electrons on it falls through a potential difference of 100 volts. Calculate the energy acquired by it in electron volts (ev).	(03)
6	а	State only Ampere's law and apply to find the magnetic field due to a current carrying solenoid?	(05)
	b	A square coil of side 10cm has 200 turns and rotates in a uniform magnetic field of magnitude 0.05T. If peak emf is 12V, What is angular velocity of the coil?	(03)
7	а	How the comparator can be used as night switch?	(05)
1	b	What is the resonance frequency of a circuit which includes a coil of inductance 2.5H and a capacitance $40\mu F$?	(03)
8	а	What is fission chain reaction? Describe controlled and uncontrolled chain reactions?	(05)
	b	A 1.25cm diameter cylinder is subjected to a load of 2500kg. Calculate the stress on the bar in mega pascals.	(03)

X-rays of wavelength 22pm are scattered from a carbon target. The scattered

radiations being viewed at 85° to the incident beam. What is Compton shift?

What is LASER? Explain Helium – Neon laser. Write its four uses.