-	Warning:- Please w (Inter Part - II)	rite your Roll No. in the	e space provided and sign. 19 to 2019-21) Sig.	Roll No
Physic		(Group I)	19 6 2019-21) Sig.	Paper (II)
Note:- that circ result in Answer	cle in front of that question between zero mark in that question Sheet and fill bubbles ac	paper or each objective type quest on number. Use marker or on. Write Park CODE, cordingly in wise the str	cion as A, B, C and D. The choir pen to fill the circles. Cutting of	Maximum Marks:- 17 ce which you think is correct; fill or filling two or more circles with on paper, on the both sides of the situation. Use of lnk Remover or
	orrecting fluid is not allow		a minta (6 a) has a	Q. 1
1)			c plate (Er=2) has a	capacitance 2. If the on is
	removed then capac	o e of capacitor becom		
	(A) C	(B) $\frac{c}{2}$	(C) $\frac{c}{\sqrt{2}}$	(D) $\sqrt{2C}$
2)	An ECG records the	4		lectrical process in the heart.
	(A) Heart beat	(B) Pulse rate	(C) Voltage	(D). Pressure
3)	If the length of the co	onductor is doubled an	d its cross sectional area is	halved, its conductance will
	(A) Increases four ti	mes (B) Becomes one-	fourth (C) Becomes one-ha	df (D) Remains unchanged
4)	For a current carryin	g solenoid the term 'n'	has unit as	
	(A) No unit	(B) m	$(C) m^{-1}$	(D) $m^{-2}$
5)		ires carrying current in		(D) No effect
(1)	(A) Attract	(B) Repel	(C) Turn	
6)		(B) 0.5 H	5 s. If the induced emf is 80 V, the (C) 1.5 H	(D) 2 H
7)	(A) 1 H  Maximum motional	emf in a conductor is o	given by VRI. At which an	gle the conductor moves in
7.3	magnetic field such	that emf in it becomes	s half then its maximum val	ue is
	(A) 0°C	(B) 30°	- (C) 45°	(D) 60°
(2)			pacitor of A.C. Circuit will	
91	(A) Large	(B) Small	(C) Infinite	(D) Zero
9)	With increase in free	quency of an A.C. supp	oly, the impedance of RLC	series circuit.
- /	(A) Decreases	(B) Increases	(C) Remains consta	nt (D) Ist decrease, become minimum
				and then increase
10)	Curie temperature fo	r iron is about		and then increase
	Curie temperature fo (A) 750 K	(B) 570 K	(C) 1023 K	
	(A) 750 K	(B) 570 K	n-inverting amplifier is	and then increase (D) 670 K
11)	(A) 750 K If $R_1 = \text{infinity and } R$ (A) 0	(B) 570 K $R_2 = 0$ , then gain of not (B) 1	(C) 1023 K n-inverting amplifier is (C) 2	and then increase
11) l (12) 1	(A) 750 K If $R_1 = \text{infinity and } R$ (A) 0 The term transistor S	(B) 570 K R <sub>2</sub> = 0, then gain of not (B) 1	n-inverting amplifier is (C) 2	and then increase  (D) 670 K  (D) Infinity
11) l (12) 1	(A) 750 K  If $R_i$ = infinity and $R_i$ (A) 0  The term transistor S (A) Transfer of	(B) 570 K  R <sub>2</sub> = 0, then gain of not (B) 1  tands for (B) Transfer of vol	n-inverting amplifier is (C) 2 tage (C) Transfer of cur	and then increase  (D) 670 K  (D) Infinity  rent (D) All of these
11) l (12) 1	(A) 750 K  If $R_i$ = infinity and $R_i$ (A) 0  The term transistor S (A) Transfer of	(B) 570 K  R <sub>2</sub> = 0, then gain of not (B) 1  tands for (B) Transfer of vol	n-inverting amplifier is (C) 2 tage (C) Transfer of cur	and then increase  (D) 670 K  (D) Infinity  rent (D) All of these
11) (12) (	(A) 750 K  If $R_i$ = infinity and $R_i$ (A) 0  The term transistor S (A) Transfer of	(B) 570 K  R <sub>2</sub> = 0, then gain of not (B) 1  tands for (B) Transfer of vol	n-inverting amplifier is (C) 2 tage (C) Transfer of cur	and then increase  (D) 670 K  (D) Infinity  rent (D) All of these  wavelength
11) I (12) I (13) I	<ul> <li>(A) 750 K</li> <li>If R<sub>1</sub> = infinity and R</li> <li>(A) 0</li> <li>(A) term transistor S</li> <li>(A) Transfer of resistance</li> <li>(A) the equation Δλ =</li> </ul>	(B) 570 K $R_2 = 0$ , then gain of not (B) 1  tands for (B) Transfer of volume $\frac{h}{m_o c}$ $(1 - \cos \theta)$ which	n-inverting amplifier is (C) 2  tage (C) Transfer of cur  factor is called Compton	and then increase  (D) 670 K  (D) Infinity  rent (D) All of these  wavelength
11) I (12) I (13) I	<ul> <li>(A) 750 K</li> <li>If R<sub>1</sub> = infinity and R</li> <li>(A) 0</li> <li>(A) term transistor S</li> <li>(A) Transfer of resistance</li> <li>(A) the equation Δλ =</li> </ul>	(B) 570 K $R_2 = 0$ , then gain of not (B) 1  tands for (B) Transfer of volume $\frac{h}{m_o c}$ $(1 - \cos \theta)$ which	n-inverting amplifier is (C) 2  tage (C) Transfer of cur  factor is called Compton	and then increase  (D) 670 K  (D) Infinity  rent (D) All of these
11) I (12) I (13) I (2	(A) 750 K  If $R_1 = \text{infinity and } R$ (A) 0  The term transistor S  (A) Transfer of resistance  In the equation $\Delta \lambda = \frac{h}{R}$	(B) 570 K $R_2 = 0$ , then gain of not (B) 1  tands for (B) Transfer of volume $\frac{h}{m_o c}$ (1 - cos $\theta$ ) which (B) $\frac{1}{m_o c}$	n-inverting amplifier is (C) 2  tage (C) Transfer of cur factor is called Compton (C) $(1-\cos\theta)$	and then increase  (D) 670 K  (D) Infinity  rent (D) All of these  wavelength  (D) $\frac{h}{m_o c} (1 - \cos \theta)$
11) I (12) I (2) 13) In (4) In	(A) 750 K  If $R_1$ = infinity and $R_2$ (A) 0  The term transistor S  (A) Transfer of resistance  In the equation $\Delta \lambda = \frac{h}{m_a c}$ In photoelectric effect if the A) Same	(B) 570 K $R_2 = 0$ , then gain of not (B) 1  tands for (B) Transfer of volume $\frac{h}{m_o c}$ (1 - cos $\theta$ ) which intensity of light is made two (B) Double	n-inverting amplifier is  (C) 2  tage (C) Transfer of curve factor is called Compton  (C) $(1-\cos\theta)$ vice than initial value. The maxim (C) Half	and then increase  (D) 670 K  (D) Infinity  rent (D) All of these  wavelength
11) I (12) T (2 13) I (4) In (4) In (4) In	(A) 750 K  If $R_1$ = infinity and $K$ (A) 0  The term transistor S  (A) Transfer of resistance  In the equation $\Delta \lambda$ =  (A) $\frac{h}{m_o c}$ In photoelectric effect if the A) Same  The energy of the 4 <sup>th</sup>	(B) 570 K $R_2 = 0$ , then gain of not (B) 1  tands for (B) Transfer of volume (B) $\frac{h}{m_o c}$ (1 - cos $\theta$ ) which (B) $\frac{1}{m_o c}$ intensity of light is made to (B) Double orbit in hydrogen atom	n-inverting amplifier is  (C) 2  tage (C) Transfer of curve factor is called Compton  (C) $(1-\cos\theta)$ vice than initial value. The maxim  (C) Half  m is	and then increase  (D) 670 K  (D) Infinity  rent (D) All of these  wavelength  (D) $\frac{h}{m_o c}$ (1-cos $\theta$ )  sum K.E of photoelectron becomes  (D) Four times
11) I (12) I (2 13) In (2 14) In (2 15) T	(A) 750 K  If $R_1$ = infinity and $K$ (A) 0  The term transistor S  (A) Transfer of resistance  In the equation $\Delta \lambda = \frac{h}{m_n c}$ In photoelectric effect if the A) Same  The energy of the 4 <sup>th</sup> (A) 13.6 eV	(B) 570 K $R_2 = 0$ , then gain of not (B) 1  tands for (B) Transfer of volume (B) $\frac{h}{m_o c}$ (1 - cos $\theta$ ) which intensity of light is made to (B) Double orbit in hydrogen atom (B) - 0.85 eV	n-inverting amplifier is  (C) 2  tage (C) Transfer of curve factor is called Compton  (C) $(1-\cos\theta)$ vice than initial value. The maxim  (C) Half  m is  (C) -3.40 eV	and then increase  (D) 670 K  (D) Infinity  rent (D) All of these  wavelength  (D) $\frac{h}{m_o c} (1 - \cos \theta)$ num K.E of photoelectron becomes
11) I (12) I (2 13) In (4) In (4) In	(A) 750 K  If $R_1$ = infinity and $R_2$ (A) 0  The term transistor S  (A) Transfer of resistance  In the equation $\Delta \lambda$ =  (A) $\frac{h}{m_a c}$ In photoelectric effect if the A) Same  The energy of the 4 <sup>th</sup> (A) -13.6 eV  In which nuclear determination of the series	(B) 570 K $R_2 = 0$ , then gain of not (B) 1  tands for (B) Transfer of volume (B) $\frac{h}{m_o c}$ (1 - cos $\theta$ ) which intensity of light is made to (B) Double orbit in hydrogen atom (B) - 0.85 eV	n-inverting amplifier is  (C) 2  tage (C) Transfer of curve a factor is called Compton  (C) $(1-\cos\theta)$ vice than initial value. The maxim  (C) Half  m is  (C) -3.40 eV  onizing particle is shown	and then increase  (D) 670 K  (D) Infinity  rent (D) All of these  wavelength  (D) $\frac{h}{m_o c} (1 - \cos \theta)$ num K.E of photoelectron becomes  (D) Four times  (D) -1.51 eV
11) I (12) T (2 13) In (2 14) In (2 15) T (2 16) In	(A) 750 K  If $R_1$ = infinity and $R_1$ (A) 0  The term transistor S  (A) Transfer of resistance  In the equation $\Delta \lambda$ = 1  A) $\frac{h}{m_0 c}$ In photoelectric effect if the A) Same  The energy of the 4 <sup>th</sup> (A) -13.6 eV  In which nuclear determinants with the A) wilson cloud chamber	(B) 570 K $R_2 = 0$ , then gain of not (B) 1  tands for (B) Transfer of volume (B) $\frac{h}{m_o c}$ (1 - cos $\theta$ ) which (B) $\frac{1}{m_o c}$ intensity of light is made to (B) Double orbit in hydrogen atom (B) - 0.85 eV (ctor, visible path of its (B) GM Counter	n-inverting amplifier is  (C) 2  tage (C) Transfer of curve a factor is called Compton  (C) $(1-\cos\theta)$ vice than initial value. The maxim  (C) Half  m is  (C) -3.40 eV  onizing particle is shown	and then increase  (D) 670 K  (D) Infinity  rent (D) All of these  wavelength  (D) $\frac{h}{m_o c}$ (1-cos $\theta$ )  sum K.E of photoelectron becomes  (D) Four times
13) It (2) 13) It (2) 15) It (2) 16) It (2) 17) It (3) It (4)	(A) 750 K  If $R_1$ = infinity and $R_1$ (A) 0  The term transistor S  (A) Transfer of resistance  In the equation $\Delta \lambda$ =  (A) $\frac{h}{m_0 c}$ In photoelectric effect if the A) Same  The energy of the 4 <sup>th</sup> (A) -13.6 eV  In which nuclear determination with the winding energy of the hinding energy of the	(B) 570 K $R_2 = 0$ , then gain of not (B) 1  tands for (B) Transfer of volume (B) Transfer of volume (B) $\frac{h}{m_o c}$ intensity of light is made to (B) Double orbit in hydrogen ato (B) - 0.85 eV (ctor, visible path of its er nucleon is	n-inverting amplifier is (C) 2  tage (C) Transfer of cur factor is called Compton (C) (1-cos θ)  vice than initial value. The maxim (C) Half  m is (C) -3.40 eV onizing particle is shown (C) Solid State det	and then increase  (D) 670 K  (D) Infinity  rent (D) All of these  wavelength  (D) $\frac{h}{m_o c}$ (1-cos $\theta$ )  num K.E of photoelectron becomes  (D) Four times  (D) -1.51 eV
13) It (2) 13) It (2) 15) It (2) 16) It (2) 17) It (3) It (4)	(A) 750 K  If $R_1$ = infinity and $R_1$ (A) 0  The term transistor S  (A) Transfer of resistance  In the equation $\Delta \lambda$ =  (A) $\frac{h}{m_0 c}$ In photoelectric effect if the A) Same  The energy of the 4 <sup>th</sup> (A) -13.6 eV  In which nuclear determination with the winding energy of the hinding energy of the	(B) 570 K $R_2 = 0$ , then gain of not (B) 1  tands for (B) Transfer of volume (B) Transfer of volume (B) $\frac{h}{m_o c}$ intensity of light is made to (B) Double orbit in hydrogen ator (B) - 0.85 eV (Cotor, visible path of its (B) GM Counter (B) GM Counter (B) Least for heaven (B)	n-inverting amplifier is (C) 2  tage (C) Transfer of cur factor is called Compton (C) (1-cos θ)  vice than initial value. The maxim (C) Half  m is (C) -3.40 eV onizing particle is shown (C) Solid State det	and then increase  (D) 670 K  (D) Infinity  rent (D) All of these  wavelength  (D) $\frac{h}{m_o c} (1 - \cos \theta)$ num K.E of photoelectron becomes  (D) Four times  (D) -1.51 eV  tector (D) All of these  ght (D) Greatest for medium weight nuclei

	ysics	(Subjective) (Group I) (Session 2017-19 to 2019-21) (Inter Part - II) Paper (II)
,1	ne All	lowed: 2.40 hours Section I Maximum Marks: 68
,	A	Answer briefly any Eight parts from the followings:- $540-1-21$ 8 × 2 = 16
(i)	ls	E necessarily zero inside a charged rubber balloon if balloon is spherical? Assume that charge is istributed uniformly over the surface?
(ii)	H	ow can you identify that which plate of a capacitor is positively charged?
(iii)	St	tate Gauss's law and write mathematical expression. (iv) Write four properties of electric field lines.
(v)	H	ow can a current loop be used to determine the presence of a magnetic field in a given region of space?
(vi)	W	hy does the picture on a TV screen become distroted when a magnet is brought near the screen?
(vii)	St	ate Ampere's circuital law and write its mathematically expression.
(viii	) W	That is CRO? Write only its main parts. (ix) Show that $\varepsilon$ and $\frac{\Delta\Phi}{\Delta t}$ have the same unit.
$(\mathbf{x})$	$\mathbf{D}_{0}$	oes the induced emf always act to decrease the magnetic flux through a circuit?
(xi)		cfine mutual inductance and write its unit.
(xii)		rite the factors upon which self inductance depends?
3.		nswer briefly any Eight parts from the followings:- $8 \times 2 = 16$
(i)		hat is thermistor? (ii) Under what conditions, The emf of a cell and terminal potential are same.
(iii)		plain why the terminal potential of a battery decreases when the current drawn from it is increased.
(iv)		R - L circuit, will the current lag or lead? Illustrate your answer by a vector diagram.
$(\mathbf{r})$		efine instantaneous and peak value of current. (vi) Write down two properties of RLC parallel circuit.
(vii)		hat is meant by Hystersis loss? How is it used in the construction of a transformer.
(viii		iscuss the mechanism of electrical conduction by holes and electrons in semiconductor element.
(ix)		hat is difference between Elasticity and plasticity. (x) Why is the base current is very small?
(xi)		ne anode of a diode is 0.2 V positive with respect to its cathode. Is it forward biased.
(xii)	De	efine current gain of a transistor. Give its unit.
4.	A	nswer briefly any Six parts from the followings:- $6 \times 2 = 12$
4. (i)	Ai W	nswer briefly any Six parts from the followings:-  hich photon, red, green, or blue carries the most. (a) energy and (b) momentum
4. (i) (ii)	Ai W	hich photon, red, green, or blue carries the most. (a) energy and (b) momentum ill bright light ejects more electrons from a metal surface than dimmer light of the same colour?
4. (i) (ii) (iii)	An W W De	hich photon, red, green, or blue carries the most. (a) energy and (b) momentum ill bright light ejects more electrons from a metal surface than dimmer light of the same colour? efine Stefen's Boltzmann Law. Also give the value of Stefen's constant.
4. (i) (ii) (iii) (iv)	An W W De Ca	hich photon, red, green, or blue carries the most. (a) energy and (b) momentum ill bright light ejects more electrons from a metal surface than dimmer light of the same colour? Efine Stefen's Boltzmann Law. Also give the value of Stefen's constant. In X-ray be reflected, refracted, diffracted and polarized just like any other wave? Explain.
4. (i) (ii) (iii) (iv) (v)	W W De Ca Exp	hich photon, red, green, or blue carries the most. (a) energy and (b) momentum ill bright light ejects more electrons from a metal surface than dimmer light of the same colour? Efine Stefen's Boltzmann Law. Also give the value of Stefen's constant. In X-ray be reflected, refracted, diffracted and polarized just like any other wave? Explain. In plain why laser action cannot occur without population inversion between atomic levels?
4. (i) (ii) (iii) (iv) (v) (vi)	W W De Ca Exp	hich photon, red, green, or blue carries the most. (a) energy and (b) momentum ill bright light ejects more electrons from a metal surface than dimmer light of the same colour? Efine Stefen's Boltzmann Law. Also give the value of Stefen's constant. In X-ray be reflected, refracted, diffracted and polarized just like any other wave? Explain. In plain why laser action cannot occur without population inversion between atomic levels? That do we mean by the term critical mass?
4. (i) (ii) (iii) (iv) (v) (vi) (vii)	An W W De Ca Exp Wh	hich photon, red, green, or blue carries the most. (a) energy and (b) momentum ill bright light ejects more electrons from a metal surface than dimmer light of the same colour? Efine Stefen's Boltzmann Law. Also give the value of Stefen's constant. In X-ray be reflected, refracted, diffracted and polarized just like any other wave? Explain. In plain why laser action cannot occur without population inversion between atomic levels? In an action which produces more ionization is less penetrating. Why?
4. (i) (ii) (iii) (iv) (v) (vi)	W W Dee Ca Exp Wh A p	hich photon, red, green, or blue carries the most. (a) energy and (b) momentum ill bright light ejects more electrons from a metal surface than dimmer light of the same colour? Efine Stefen's Boltzmann Law. Also give the value of Stefen's constant. In X-ray be reflected, refracted, diffracted and polarized just like any other wave? Explain. In plain why laser action cannot occur without population inversion between atomic levels? In at do we mean by the term critical mass? In article which produces more ionization is less penetrating. Why? In a source and a $\beta$ -source. Which would be the more
4. (i) (ii) (iii) (iv) (v) (vi) (vii) (viii)	W W De Ca Exj Wh A p If so	hich photon, red, green, or blue carries the most. (a) energy and (b) momentum ill bright light ejects more electrons from a metal surface than dimmer light of the same colour? If the Stefen's Boltzmann Law. Also give the value of Stefen's constant. In X-ray be reflected, refracted, diffracted and polarized just like any other wave? Explain. In plain why laser action cannot occur without population inversion between atomic levels? If the which produces more ionization is less penetrating. Why? If the word accidently swallows an $\alpha$ -source and a $\beta$ -source. Which would be the more gerous to him? Explain why? (ix) Define the terms mass defect and binding energy.
4. (i) (ii) (iii) (iv) (v) (vi) (vii) (viii) Note:	W W Dee Ca Exj Wh A p If se dan,	hich photon, red, green, or blue carries the most. (a) energy and (b) momentum ill bright light ejects more electrons from a metal surface than dimmer light of the same colour? Efine Stefen's Boltzmann Law. Also give the value of Stefen's constant. In X-ray be reflected, refracted, diffracted and polarized just like any other wave? Explain. In plain why laser action cannot occur without population inversion between atomic levels? In a do we mean by the term critical mass? In article which produces more ionization is less penetrating. Why? In the produces more in t
4. (i) (ii) (iii) (iv) (v) (vi) (vii) (viii)	WW Dee Ca Exp Wh A p If so dan Atto	hich photon, red, green, or blue carries the most. (a) energy and (b) momentum ill bright light ejects more electrons from a metal surface than dimmer light of the same colour? Effine Stefen's Boltzmann Law. Also give the value of Stefen's constant. In X-ray be reflected, refracted, diffracted and polarized just like any other wave? Explain. In plain why laser action cannot occur without population inversion between atomic levels? In a do we mean by the term critical mass? In a plain which produces more ionization is less penetrating. Why? In a plain why why? In a plain why? In a plain why why? In a plain why why which was a plain why why? In a plain why which was a plain why why which was a plain which was a pl
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4. (i) (ii) (iii) (iv) (v) (vi) (vii) (viii) Note: 5.	An W W Dee Ca Exp Wh A p If so dan Atto (a) (b) (a)	hich photon, red, green, or blue carries the most. (a) energy and (b) momentum ill bright light ejects more electrons from a metal surface than dimmer light of the same colour? Efine Stefen's Boltzmann Law. Also give the value of Stefen's constant. In X-ray be reflected, refracted, diffracted and polarized just like any other wave? Explain. In plain why laser action cannot occur without population inversion between atomic levels? In at do we mean by the term critical mass? In a source which produces more ionization is less penetrating. Why? In a source which would be the more gerous to him? Explain why? (ix) Define the terms mass defect and binding energy. In any three questions. Section In (8 × 3 = 24)  Explain in detail, electrical power and power dissipation in resistor. The time constant of a series RC. circuit is t=RC. Verify that an ohm times farad is equivalent to second. Derive an expression for torque on current carrying coil in uniform magnetic field.  A coil of 10 turns and 35 cm <sup>2</sup> area is in a perpendicular magnetic field of 0.5 T. The coil is pulled out of the field in 1.0 s. Find the induced emf' in the coil as it is pulled out of the field.
4. (i) (ii) (iii) (iv) (v) (vi) (viii) (viii) Note: 5.	An W W Dee Ca Exp Wh A p If so dan Atto (a) (b) (a)	hich photon, red, green, or blue carries the most. (a) energy and (b) momentum ill bright light ejects more electrons from a metal surface than dimmer light of the same colour? Efine Stefen's Boltzmann Law. Also give the value of Stefen's constant. In X-ray be reflected, refracted, diffracted and polarized just like any other wave? Explain. In plain why laser action cannot occur without population inversion between atomic levels? In and the work of the term critical mass? In a control without population inversion between atomic levels? In a control with produces more ionization is less penetrating. Why? In a control with the more gerous to him? Explain why? (ix) Define the terms mass defect and binding energy. In the time constant of a series RC. circuit is t=RC. Verify that an ohm times farad is equivalent to second. Derive an expression for torque on current carrying coil in uniform magnetic field. A coil of 10 turns and 35 cm² area is in a perpendicular magnetic field of 0.5 T. The coil is pulled out of the field in 1.0 s. Find the induced emf' in the coil as it is pulled out of the field. What is operational amplifier? How op. Amplifier is used as Non Inverting Amplifier?
4. (i) (ii) (iii) (iv) (v) (vi) (viii) (viii) Note: 5.	An W W Dee Ca Exp Wh A p If so dan Atto (a) (b) (a) (b)	hich photon, red, green, or blue carries the most. (a) energy and (b) momentum ill bright light ejects more electrons from a metal surface than dimmer light of the same colour? If the Stefen's Boltzmann Law. Also give the value of Stefen's constant. In X-ray be reflected, refracted, diffracted and polarized just like any other wave? Explain. In plain why laser action cannot occur without population inversion between atomic levels? If and to we mean by the term critical mass? If and the work was an $\alpha$ -source and a $\beta$ -source. Which would be the more gerous to him? Explain why? (ix) Define the terms mass defect and binding energy. If the time constant of a series RC. circuit is t=RC. Verify that an ohm times farad is equivalent to second. Derive an expression for torque on current carrying coil in uniform magnetic field. A coil of 10 turns and 35 cm² area is in a perpendicular magnetic field of 0.5 T. The coil is pulled out of the field in 1.0 s. Find the induced emf in the coil as it is pulled out of the field. What is operational amplifier? How op. Amplifier is used as Non Inverting Amplifier? A 10 mH, 20 $\Omega$ coil is connected across 240 V and 180/ $\pi$ Hz source. How much power does it dissipate.
4. (i) (ii) (iii) (iv) (v) (vi) (vii) (viii) Note: 5.	An W. W. Dee Ca Exj. Wh. A p. If so dan, Atto. (a) (b) (a) (b)	hich photon, red, green, or blue carries the most. (a) energy and (b) momentum ill bright light ejects more electrons from a metal surface than dimmer light of the same colour? Efine Stefen's Boltzmann Law. Also give the value of Stefen's constant. In X-ray be reflected, refracted, diffracted and polarized just like any other wave? Explain. plain why laser action cannot occur without population inversion between atomic levels? that do we mean by the term critical mass? Particle which produces more ionization is less penetrating. Why? Comeone accidently swallows an $\alpha$ -source and a $\beta$ -source. Which would be the more gerous to him? Explain why? (ix) Define the terms mass defect and binding energy. Empt any three questions. Section
4. (i) (ii) (iii) (iv) (v) (vi) (viii) Note: 5. 6.	An W. W. Dee Ca Exy Wh. A p If so dan, Atte (a) (b) (a) (b)	hich photon, red, green, or blue carries the most. (a) energy and (b) momentum ill bright light ejects more electrons from a metal surface than dimmer light of the same colour? If the Stefen's Boltzmann Law. Also give the value of Stefen's constant. In X-ray be reflected, refracted, diffracted and polarized just like any other wave? Explain. In plain why laser action cannot occur without population inversion between atomic levels? If and to we mean by the term critical mass? If and the work was an $\alpha$ -source and a $\beta$ -source. Which would be the more gerous to him? Explain why? (ix) Define the terms mass defect and binding energy. If the time constant of a series RC. circuit is t=RC. Verify that an ohm times farad is equivalent to second. Derive an expression for torque on current carrying coil in uniform magnetic field. A coil of 10 turns and 35 cm² area is in a perpendicular magnetic field of 0.5 T. The coil is pulled out of the field in 1.0 s. Find the induced emf in the coil as it is pulled out of the field. What is operational amplifier? How op. Amplifier is used as Non Inverting Amplifier? A 10 mH, 20 $\Omega$ coil is connected across 240 V and 180/ $\pi$ Hz source. How much power does it dissipate.

1221 Warning:- Please, do not write anything on this question paper except your Roll No.

An electron is accelerated through a potential difference of 50 V calculate its de-Broglie wave length. 1276 -- 1221 ALP -- 22000

8.

. 9.

(b)