TALEEMI DUNYA

Test Syllabus: Unit # 9

St. Name		Test	PHYSICS	T. Marks	30	Time	60 Min
F.Name		Class	12th	T. Code	U#9	T. Date	

NOTE: Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that Question with Marker or Pen ink. Cutting or filling two or more circles will result in zero mark in that question.**6x1=6.**

1	The energy of the 4th orbit in hydrogen atom is:						
(a)	-2.1 eV	(b)	-3.50 eV	(c)	-13.60 eV	(d)	-0.85 eV
2	The energy of electron in ground state of hydrogen atom is -13.6 eV, then its energy in fourth orbit is:						
(a)	-3.4 eV	(b)	-0.85 eV	(c)	-54.4 eV	(d)	-13.6 eV
3	An electron in H-atom is excited from from ground state n=4. How many spectral lines are possible in this case?						
(a)	6	(b)	5	(c)	4	(d)	3
4	Production of X-rays is reverse process of:						
(a)	Photo-electric effect	(b)	Compton effect	(c)	Annihilation	(d)	Pair production
5	Laser can be made by creating:						
(a)	Meta stable	(b)	Population inversion	(c)	Excited state	(d)	All of these
6	For Holography we use:						
(a)	X-rays	(b)	Laser	(c)	γ – rays	(d)	β – rays

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Q.2 Write short answers of the following questions. **(8x2=16)**
1. Can an electron in the ground state of hydrogen atom absorb a photon of energy 13.6 ev or greater them 13.6 ev?
2. Define characteristic X-rays and continuous X-rays.
3. What is meant by stimulated emission?
4. Distinguish between stimulated emission and spontaneous emission.
5. Define population inversion and meta stable state.
6. What is mean by population inversion and lasing action?
7. Give any two uses of laser in medicine.
8. What is meant by population inversion? Explain.

Q.3 Write long answers of the following questions. **(4+4=8)**

(a)Electron in a X-ray tube are accelerated through a potential difference of 3000 V. If these electrons were slow down in a target. What will be the minimum wavelength of the X-rays produced?
(b) Find the speed of electron in the first Bohr orbit.