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	10	XERCISE-I (CONC	EPTUAL QUESTION	NS)									
1.	If \hat{E} and \hat{B} are the electric and magnetic field vectors of electromagnetic waves then the												
	direction of propagat	ion of electromagnetic	wave is along the dire	ction of –									
	(1) $\stackrel{1}{E}$	(2) $\stackrel{1}{B}$	(3) $\stackrel{1}{\mathrm{E}}\times\stackrel{1}{\mathrm{B}}$	(4) none of these									
Ans.	(3)												
2.	The electromagnetic waves do not transport – (1) energy (2) charge (3) momentum (4) information												
	(1) energy	(2) charge	(3) momentum	(4) information									
Ans.	(2)												
3	The wave function (in S.I. units) for an electromagnetic wave is given as –												
5.	$\psi(x, t) = 10^3 \sin \pi (3 \times 10^6 x - 9 \times 10^{14} t)$ The speed of the wave is –												
	$\psi(\mathbf{x}, t) = 10^{-10} \sin \pi (3^{-1})$	$(2) 3 \times 10^8 \text{ m/s}$	(3) 3×10^6 m/s	(4) none of these (4) information given as – is – (4) 3×10^7 m/s (4) 6.66 nm ated with – only density is zero nagnetic field will be (4) $\frac{1}{2} \frac{\mu_0}{B^2}$ eld will be – (4) $\frac{1}{2} \varepsilon_0 E^2$ urface would be – (4) $0^\circ C$									
Ans.	(1) <i>y</i> × 10 ⁻¹ m/3	(2) 5 × 10 m/s											
	(-)												
4.	In the above problem, wavelength of the wave is-												
	(1) 666 nm	(2) 666 Å	(3) 6 <mark>66 μm</mark>	(4) information given as – (4) 3×10^7 m/s (4) 6.66 nm ted with – nly lensity is zero agnetic field will be (4) $\frac{1}{2} \frac{\mu_0}{B^2}$ d will be – (4) $\frac{1}{2} \epsilon_0 E^2$									
Ans.	(1)												
5.	In an electromagnetic wave the average energy density is associated with –												
	(1) electric field only (2) magnetic field only												
	(3) equally with electric and magnetic fields (4) average energy density is zero												
Ans.	(2)												
6	In an algorithm and the anarray density approxisted with magnetic field will be												
0.	In an electromagnetic wave the energy density associated with magnetic field will be D^{2}												
	(1) $\frac{1}{2}LI^2$	(2) $\frac{B}{2u}$	(3) $\frac{1}{2}\mu_0 B^2$	(4) $\frac{1}{2} \frac{\mu_0}{R^2}$									
A		$2\mu_0$	2	2 D									
Ans.	(2)												
7.	In the above problem	the energy associate	d with the electric field	l will be –									
	1	$1 a^2$	$1 \epsilon^2$	1 .									
	(1) $\frac{1}{2}$ CV ²	(2) $\frac{1}{2} \frac{q}{C}$	(3) $\frac{1}{2}\frac{3}{E}$	(4) $\frac{1}{2}\varepsilon_0 E^2$									
Ans.	(4)	2 0											
8.	If there were no atmo	osphere, the average te	mperature on earth sur	face would be –									
	(1) lower	(2) higher	(3) same	(4) 0° C									
Ans.	(1)												
9.	In which part of earth	h's atmosphere is the or	zone layer present ?	(4) 1									
	(1) troposphere	(2) stratosphere	(3) 10nosphere	(4) mesosphere									

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Ans.	(2)											
10.	The ozone layer is early a second sec	arth's atmosphere is cru	cial for human surviva	l because it –								
	(1) contains ions		(2) reflects radio signals									
	(3) reflects radio sig	nals	(4) reflects infra red i	rays								
Ans.	(3)											
11.	The frequency from	3×10^9 Hz to 3×10^{10}	Hz is –									
	(1) high frequency b	and	(2) super high freque	ncy band								
	(3) ultra high freque	ncy band	(4) very high frequen	cy band								
Ans.	(2)											
12.	The frequency from 3MHz to 30 MHz is known as-											
	(1) audio band		(2) medium frequenc	y band								
	(3) very high frequen	ncy band	(4) high frequency ba	and								
Ans.	(4)											
13.	The AM range of rad	diowaves have frequend	cy-									
	(1) less than 30 MHz	Z	(2) more than 30 MHz									
A	(3) less than $20000H$	lz	(4) more than 200001	ΗZ								
Ans.	(1)											
14.	Select wrong statem	ent from the following	for EMW –									
	(1) are transverse	(2) travel with same s	speed in all medium									
	(3) travel with the sp	beed of light	(4) are produced by a	ccelerating charge								
Ans.	(2)											
15.	The waves related to	tele-communication a	re-									
Ang	(1) infrared (3)	(2) visible light	(3) microwaves	(4) ultraviolet rays								
Ans.	(3)											
16.	The nature of electro	magnetic wave is-										
101	(1) longitudinal		(2) longitudinal stationary									
	(3) transverse		(4) transverse stationary									
Ans.	(3)			5								
17.	Greenhouse effect ke	eeps the earth surface-										
	(1) cold at night	(2) dusty and cold	(3) warm at night	(4) moist								
Ans.	(3)											

18. The speed of electromagnetic radiation in vacuum is :-

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	(1) $\mu_0 \in_0$	(2) $\sqrt{\mu_0 \in_0}$	$(3) \ \frac{1}{\mu_0 \in_0}$	$(4) \ \frac{1}{\sqrt{\mu_0 \in_0}}$			
Ans.	(4)			v . o o			
19.	What is the cause of (1) Infrared rays	f greenhouse effect ? (2) Ultraviolet rays	(3) X-rays	(4) Radio waves			
Ans.	(1)		•				
20.	The conduction curr	rent is the same as displ	acement current wh	en source is :-			

(1) ac only (2) dc only (3) both ac and de (4) neither de nor ac

Ans. (3)

EXERCISE-I (Conceptual Questions) ANSWER KE												KEY			
Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	3	2	2	1	3	2	4	1	2	3	2	4	1	2	3
Que.	16	17	18	19	20										
Ans.	3	3	4	1	3					10					