## **Self Practice Paper (SPP)**

This Section is not meant for classroom discussion. It is being given to promote self-study and self testing amongst the Resonance students.

1.	The displacement curre	isplacement current flows in the dielectric of a capacitor when the potential difference across i								
	<ul><li>(1) is increasing with tim</li><li>(3) has assumed a const</li></ul>	ne stant value	<ul><li>(2) is decreasing with time</li><li>(4) becomes zero</li></ul>							
2.	Infrared spectrum lies b (1) radio wave and micr (3) visible and ultra-viole	etween owave region. et region.	[CET 1998; NCERT1980] (2) microwave and visible region. (4) ultra-violet and X-ray.							
3.	A man can take pictur acceptable to (1) ultraviolet rays	es of those objects whi	ch are not fully visible t	to the eye using camera films [ <b>P.M.T.91]</b> (4) infra - red rays						
4	The electromagnetic ray	diations are in descendin	a order of wavelength in	the following sequence						
	<ul> <li>(1) infra – red waves, radio waves, X–rays, visible light rays</li> <li>(2) radio– waves, infra - red waves, visible light, X–rays</li> <li>(3) radio waves, visible light, infra - red waves, X–rays</li> <li>(4) X–rays, visible light, infra - red wave, radiowaves</li> </ul>									
5.	Maxwell's equation deso (1) electricity only	cribe the fundamental lav (2) magnetism only	ws of (3) mechnaics only	<b>[DPMT 1998]</b> (4) both (1) and (2)						
6.	Heat radiations propaga (1) α-rays	ate with the speed of (2) β-rays	(3) light waves	[AMU 2000] (4) sound waves						
7.	Radio wave diffract arou	adio wave diffract around building although light waves do not. The reason is that radio waves :								
	<ul><li>(1) travel with speed lar</li><li>(3) carry news</li></ul>	ger than c	(2) have much larger wavelength than light (4) are not electromagnetic waves.							
8.	<ul> <li>The curve drawn between velocity and frequency of a photon in vacuum will be [MP PMT 2000]</li> <li>(1) straight line parallel to frequency axis</li> <li>(2) straight line parallel to velocity axis.</li> <li>(3) straight line passing through origin and making an angle of 45° with frequency axis</li> <li>(4) hyperbola.</li> </ul>									
9.	Which rays are not the   (1) X-rays	portion of electro-magne (2) Microwaves	tic spectrum ? (3) α-rays	[Haryana CEET 2000] (4) Radiowaves.						
10.	The difference between (1) velocity	soft and hard X-rays is (2) intensity	of (3) frequency	[MP PMT 2000] (4) polarization						

	SPP Answers												
1.	(1,2)	2.	(2)	3.	(4)	4.	(2)	5.	(4)	6.	(3)	7.	(2)
8.	(1)	9.	(3)	10.	(3)								
	SP	P S	olut	ion	5								

1. 
$$i_{D} = \stackrel{\in_{0}}{\overset{d\phi}{dt}} = \stackrel{\in_{0}}{\overset{AdB}{dt}}$$
  
 $i_{D} \neq 0$  whenever  $\frac{dB}{dt} \neq 0$ 

- **5.** Maxwell's equation describe laws of electricity and magnetism.
- 6. For differection wavelength of EM-wave should be comparable to slit width.
- **10.** Frequency range for soft X-rays and hard X-rays is different.