

**PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)**

**BSc DEGREE EXAMINATION DECEMBER 2024
(Third Semester)**

Branch - VISUAL COMMUNICATION (ELECTRONIC MEDIA)

DIGITAL SOUND, IMAGE AND LIGHT PROCESSING

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Human hearing is most sensitive around a) 10 Hz b) 4 kHz c) 18 kHz d) 25 kHz	K1	CO1
	2	To distinguish between the sound of a nadaswaram (flute) and a mirudangam (table) a) Timbre b) Space c) Phase d) Snare	K2	CO2
2	3	In a noisy environment, most people have the ability to listen to one conversation at a time, this is called a) Cocktail party effect b) Distance perception c) Auditory streaming d) Tones	K1	CO2
	4	The ratio of screen width to screen height is a) Aspect ratio b) Scanning c) Interlaced d) Resolution	K2	CO2
3	5	Measurement of light falling on a surface or source display a) Colour b) Brightness c) Pixel d) Picture	K1	CO3
	6	Candella per meter squared may also be referred to as a) Nits b) Scaling c) Surface d) Sone	K2	CO3
4	7	In digital, the difference between brightness of an ON pixel and an OFF pixel is a) Contrast b) Sharpness c) Hue d) Saturation	K1	CO4
	8	Ability to recognize images and text from the background is a) Passive viewing b) Full motion c) Screen format d) Matrix	K2	CO4
5	9	What does the acronym CCT stand for? a) Complementary Colour Temperature b) Corrected Colour Temperature c) Correlated Colour Temperature d) Compensated Colour Temperature	K1	CO3
	10	Which one of the following denotes the difference between the lightest and darkest parts of an image in a display? a) Contrast b) Brightness c) Colour d) Hue	K2	CO5

Cont...

SECTION - B (35 Marks)Answer **ALL** questions**ALL** questions carry **EQUAL** Marks

(5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Distinguish fundamental frequency and its harmonics. Simplify the same with wave diagrams.	K2	CO1
		(OR)		
	11.b.	Infer how sound behaves in an enclosure. Interpret the chances of echo, and reverberation in that space.		
2	12.a.	Categorize Western and Indian music based on musical notes, tones, semitones, interval and ragas.	K4	CO2
		(OR)		
	12.b.	With a graph, demonstrate Equal loudness contours and loudness level.		
3	13.a.	Inspect the concept behind analog to digital conversion and examine the logic behind higher quantization and higher definition.	K5	CO3
		(OR)		
	13.b.	Explain why we need to convert sound pressure level into Decibel (dB) level.		
4	14.a.	Identify any seven light sources based on its types, construction and colour temperature.	K3	CO4
		(OR)		
	14.b.	Infer and summarize the effect of light and colour on visual aesthetics and the biological influence on human system.		
5	15.a.	Explain the relationship between light and human eye. List any two characteristics of light based on a medium and surface.	K4	CO5
		(OR)		
	15.b.	Discuss how adaptation of digital technology and energy efficient lightings in media production helps in sustainability.		

SECTION -C (30 Marks)Answer **ANY THREE** questions**ALL** questions carry **EQUAL** Marks

(3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Construct how human ear perceives sound, beginning from the (i) "Pinna" to (ii) the ear canal, (iii) the middle ear, (iv) the inner cochlea and identify its purposes.	K4	CO1
2	17	Appraise the advantages of digital sounds' lossless compression and its adaptation in all professional devices.	K5	CO2
3	18	Illustrate "Visible Light Spectrum", identify the colours' frequency in nano meter. Infer how CCD or CMOS converts to luminance and chrominance.	K4	CO3
4	19	Demonstrate basic law of illumination. How does light and colour meter measure the illumination?	K4	CO4
5	20	Propose appropriate display systems like (i) Digital Light Processing, (ii) Liquid Crystal Display, (iii) Organic Liquid Emitting Diode, (iv) Quantum LED for small indoor and open	K5	CO5

Z-Z-Z END