Code No.: EC512PE | R20 | H.T.No. | | | 8 | R | | | | | |

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
III–B.TECH–I–Semester End Examinations (Supply) – December 2024
DIGITAL IMAGE AND VIDEO PROCESSING
(ECE)

[Time: 3 Hours] **[Max. Marks: 70]**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 20 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks.

PART-A **(20 Marks)**

1. a)	Mention the different image file formats.	[2M]
b)	Write the difference between Walsh and Hadamard transform.	[2M]
c)	Define image enhancement.	[2M]
d)	What is blind image restoration?	[2M]
e)	Write short note on edge detection.	[2M]
f)	What are the two main types of data compression?	[2M]
g)	How digital video is represented?	[2M]
h)	What are the different filtering operations used in image processing?	[2M]
i)	What are the general methodologies used in motion estimation?	[2M]
j)	Write short note on motion estimation in video processing.	[2M]

PART-B **(50 Marks)**

2.	Explain in detail about image sampling and quantization.	[10M]
	OR	
3.	What is Haar transform? Write the procedure to determine the Haar transform in image processing.	[10M]
4.	Explain the histogram equalization method of image enhancement. Discuss about histogram specification technique with equations.	[10M]
	OR	
5.	Explain about image restoration using minimum mean square error filtering method.	[10M]
6.	Discuss in detail about edge detection and edge linking method.	[10M]
	OR	
7.	Explain image segmentation using region growing and write the applications of image segmentation	[10M]
8.	Write an overview of video features utilized in video analysis	[10M]
	OR	
9.a.	Explain the procedure for sampling video signals.	[5M]
b.	Compare Geometric and photometric image formation.	[5M]
10.	Explain about pixel based motion estimation and mesh based motion estimation.	[10M]
	OR	
11.a.	Write the advantages of predictive coding over other coding.	[5M]
b.	Write the different applications of motion estimation in video coding.	[5M]

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