(Pages : 3) **R – 6671**

Reg. No. : .....

Name : .....

Fourth Semester M.Sc. Degree Examination, July 2023

Computer Science

CS 541 : RESEARCH METHODOLOGY AND REPORT WRITING

(2021 Admission)

Time : Three Hours Max. Marks : 75

SECTION – A

Answer **all** questions. **Each** question carries **3** marks.

1. What do you mean by research?
2. List out the different criteria for good research.
3. What do you mean by Kurtosis?
4. What is Spearman's rank correlation coefficient? Explain its use?
5. Explain the basic data types in R prograrmning language.
6. What is confint in R programming?
7. What is symposium?
8. List any two referencing styles in a thesis.
9. What is WoS and Scopus?

(9 × 3 = 27 Marks)

P.T.O.

SECTION – B

Answer any **one** questions from each module. Each question carries **8** marks.

Module – I

10. What is literature review? Explain the need and importance of literature review for a good research outcome.

11. How do you define a research problem? Give a suitable example to illustrate your answer.

Module – II

12. Calculate the mean, medium and mode for the following frequency distributions

Marks	0-10	11-20	21-30	31-40	41-50	51-60
No. of Students	5	10	25	30	20	10

13. What are the different types correlations? Explain each one with illustration.

Module – III

14. Discuss the various plotting functions in R programming.

15. Explain the various control structure in R programming.

Module – IV

16. Explain the steps for publishing a research article in a conference or journal.

17. Discuss the structure and components of scientific reports.

Module – V

18. Explain the procedure for adding table of contents in LaTeX.

19. Explain the way of designing chapters and sections using LaTeX.

Module – VI

20. Explain the principles of ethics in Research.

21. (a) What is impact factor? Explain the formulae for computing the impact factor of Journal.

    (b) What is citation? Explain the difference between H-index and i10-index. Also explain how they are computed?

($6 \times 8 = 48$ Marks)

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Fourth Semester M.Sc. Degree Examination, July 2023

Computer Science

CS 542 C : COMPUTER VISION

(2021 Admission)

Time : 3 Hours Max. Marks : 75

SECTION – A

Answer **all** questions. **Each** question carries **3** marks.

1. What do you mean by image quantization? Explain.
2. Define HSV color model.
3. What is convolution? Why it is used?
4. What is erosion?
5. Write a short note on seamless cloning.
6. What are the properties of an edge in an image?
7. Differentiate between object recognition and classification in computer vision.
8. What is shape matching?
9. List the types of image filters in OpenCV.

(9 × 3 = 27 Marks)

P.T.O.

SECTION – B

Answer **any one** question from each module. **Each** question carries **8** marks.

Module – I

10. Explain the different image arithmetic operations with illustration.

11. Perform histogram equalization of the image.

Gray Level R_k	0	1	2	3	4	5	6	7
No. of pixel P_k	6	8	11	12	3	5	15	6

Module – II

12. Discuss any two filters used for noise removal from digital images.

13. Describe any two region based image segmentation techniques.

Module – III

14. Give an account on multi resolution analysis in image processing.

15. What is image in painting? Explain any two image inpainting techniques in detail.

Module – IV

16. Discuss any two object detection technique in computer vision.

17. What are active contours? Explain how active contours are used for image segmentation.

Module – V

18. Explain the different types of object tracking techniques in computer vision.

19. Discuss how human pose estimation works in computer vision.

Module – VI

20. Give an account on various OpenCV image filters.

21. Write the OpenCV code for detecting and reading QR codes from an image.

(6 × 8 = 48 Marks)
