**2020/TDC(CBCS)/ODD/SEM/
CSCSEC–501T/094**

(2)

**TDC (CBCS) Odd Semester Exam., 2020
held in March, 2021**

COMPUTER SCIENCE

(5th Semester)

Course No. : CSCSEC–501T

(Programming in MATLAB)

Full Marks : 50

Pass Marks : 20

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

SECTION—A

Answer any *fifteen* of the following questions :

1×15=15

1. What are the components of a computer?

2. What is an input unit?

3. What is memory unit?

4. What is output unit?

5. What is software hierarchy?

6. How are floating-point numbers represented by default?

7. What is the name of the window in which you type MATLAB commands?

8. What is a variable?

9. What are assignment statements?

10. What are constants?

11. What is an array?

12. What are expressions?

13. What is the function of load?

14. Give an example of command used for plotting.

15. What is the function of save?

16. What is sound replay?

(Turn Over)

(Continued)

17. How are waveforms formed?

18. What are the built-in functions available?

19. What are the two kinds of program files?

20. What are decision making statements?

21. What is switch statement?

22. What is nested loop?

23. What is a break statement?

24. What is fprintf( )?

25. Which command is used to output files in MATLAB?

26. Which command is used to identify files?

27. What is GUI?

28. What is the function of sort (*A*), if *A* is a vector?

29. What is rand function?

30. What is the use of rng command?

(Turn Over)

SECTION—B

Answer any *five* of the following questions : 2×5=10

31. What are constants and variables in MATLAB? Give examples.

32. Write down the feature of MATLAB.

33. Mention some popular built-in functions to plot a graph.

34. Write down the procedure to generate waveforms.

35. What are the types of loops that MATLAB provides?

36. What are the different input-output statements used in MATLAB?

37. How can polynomials be represented in MATLAB?

38. What is the type of program files that MATLAB allows to write?

39. How to randomize a list of numbers?

40. How to attach buttons to action in MATLAB?

(Continued)

SECTION—C

Answer any *five* of the following questions :

41. *(a)* Write a MATLAB program file to add two real numbers. 2

(b) How are arrays declared and initialized? How to define 3×4 matrix in MATLAB? 3

42. Explain the MATLAB environment highlighting all the sub-windows under it. 5

43. How do you plot a graph in MATLAB? Explain the steps. 5

44. *(a)* Create a script file to plot the function $y \quad x^2$. 2

(b) Create a script file to plot $\sin(x)$ and $\cos(x)$ in a single graph. 3

45. How are strings handled in MATLAB? Explain with example. 5

46. Create a script file to perform the following :
$$2\frac{1}{2}×2=5$$

(a) Multiply two matrices

(b) Transpose of a matrix

47. *(a)* How do you write to a text file in MATLAB? 2

(b) Explain the purpose of fprintf function. Give syntax. 3

48. How can you sort a vector in a random manner in MATLAB? Explain with example. 5

49. Write down the steps to create a simple GUI using push buttons, static text and pop-up menu. 5

50. Explain different controls that are used to design user interface in MATLAB. 5

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