PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2022
(Fourth Semester)

Branch – MATHEMATICS

DISCIPLINE SPECIFIC ELECTIVE – II: MATLAB

Time: Three Hours   Maximum: 75 Marks

SECTION-A (10 Marks)
Answer ALL questions
ALL questions carry EQUAL marks   (10 x 1 = 10)

1. To creates and debugs script and function files by using ____ window.
   (i) command   (ii) workspace   (iii) editor   (iv) command history.

2. To stop the execution of a MATLAB command, we use the key ____.
   (i) ctrl+c   (ii) ctrl+s   (iii) ctrl+b   (iv) ctrl+enter

3. The command creates a identity matrix is ____.
   (i) zeros(m, n)   (ii) ones(m, n)   (iii) eye(n)   (iv) ones(n, n)

4. Element-by-element exponentiation of two vectors or matrices is entered in MATLAB by ____.
   (i) \.   (ii) .^   (iii) ^.   (iv) .*

5. The permission code for opening an existing file for reading and writing is ____.
   (i) r   (ii) w   (iii) r+   (iv) w+

6. The specifier for five pointed star is _____.
   (i) p   (ii) d   (iii) s   (iv) h

7. Any variables that are assigned values within the function file is called ____ variable.
   (i) global   (ii) local   (iii) register   (iv) static

8. The MATLAB value that is associated with a function is called _____.
   (i) function grid   (ii) sub function   (iii) function function   (iv) function handle

9. Which one of the following is the lowest order of precedence of operators?
   (i) logical AND   (ii) logical OR   (iii) logical NOT   (iv) addition

10. In MATLAB, this keyword immediately moves to the next iteration of the loop is ____.
    (i) update   (ii) goto   (iii) continue   (iv) break

SECTION - B (35 Marks)
Answer ALL Questions
ALL Questions Carry EQUAL Marks (5 x 7 = 35)

11. a) Using the zeros, ones, and eye commands create the following arrays by typing one command:

$$\text{i)} \begin{bmatrix} 1 & 1 & 0 & 0 \\ 1 & 1 & 0 & 0 \end{bmatrix} \quad \text{ii)} \begin{bmatrix} 1 & 0 & 0 & 0 & 1 & 1 \\ 0 & 1 & 0 & 0 & 1 & 1 \end{bmatrix} \quad \text{iii)} \begin{bmatrix} 1 & 1 & 1 & 1 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{bmatrix}$$

OR

b) Explain about transpose operator.

12. a) How to add the elements to existing variables?

OR

b) Explain about array division.

13. a) Explain the fprintf command.

OR

b) Discuss the various formatting commands.

14.a) Mention property names and the corresponding property values.

OR

b) Explain feval command with an example.

15.a) Write short notes on relational operators.

OR

b) Write a brief note on while-end loops.

SECTION - C (30 Marks)
Answer any **THREE** Questions
ALL Questions Carry **EQUAL** Marks   (3 x 10 = 30)

16. Explain four types of windows in default layout.

17. Describe the built-in functions for managing and handling arrays in MATLAB.

18. Discuss the load command in detail.

19. Explain the plot command.

20. Write a MATLAB program to calculate sum of the first n terms of the series $\sum_{k=1}^{n} \frac{(-1)^k}{2^k} k$.

Z-Z-Z   END