DF-2999
Second Year B. Sc. (Sem. III) Examination
March / April - 2016
Applied Electronics : Paper - V
(Simulation using MATLAB)

Time : 2 Hours]
[Total Marks : 50

Instructions :

(1) Fill up strictly the details of signs on your answer book.
Name of the Examination :
SECOND YEAR B. Sc. (SEM. 3)
Name of the Subject :
APPLIED ELECTRONICS - 5

(2) All questions are compulsory.
(3) Section - 1 carry 12 marks.
(4) Section - 2 carry 20 marks.
(5) Section - 3 carry 18 marks.
(6) Symbols and terminology used here have their usual meanings.
(7) Scientific calculator is allowed.

O.M.R. Sheet बनवा अंगेली अंगेली बुझनाए आपेक्ष
O.M.R. Sheet-ली पाढ़ अपेक्ष छ.
Important instructions to fillup O.M.R. Sheet
is given on back side of the provided O.M.R. Sheet.
1. The command "what" will

   (A) Lists M-, Mat- and Mex- files on the disk
   (B) Lists Mat- on the disk
   (C) Lists only M-, on the disk
   (D) Lists only Mex-files on the disk

2. The 'workspace pane' will

   (A) None of these
   (B) Lists all variables
   (C) Lists all values of variable
   (D) Both of these

3. Whose will

   (A) None of these
   (B) lists variables currently in the workspace with their size
   (C) show only workspace
   (D) both of these

4. To modify MATLAB search path, we use

   (A) None of these
   (B) Path
   (C) Editpath
   (D) Both of these
5  Pwd
   (A) None of these
   (B) Change the current working directory
   (C) List content of current directory
   (D) Shows the current working directory

6  Which of the following MATLAB calculations would result the value 1 ?
   (A) None of these
   (B) 1+4/6
   (C) 5/2*3
   (D) 3^2/3*8

7  The difference between a function and a script is only
   (A) function variable names only have meaning within the, whereas script
       variables are available to other programs.
   (B) function file can be run from the command line
   (C) only a function requires inputs
   (D) only a script file can perform a series of commands

8  Which of the following MATLAB expression gives –1 ?
   (A) sin [–pi/2]
   (B) cos [180]
   (C) cosd [pi]
   (D) sind [3*pi/2]
9 MATLAB desktop is
(A) None of these
(B) The place where MATLAB puts u when u launch
(C) The command window
(D) Directory pane

10 The P-files are created with the
(A) None of these
(B) pcode command
(C) Ncode command
(D) Pncode command

11 Editor window is the place
(A) All of these
(B) Where you write
(C) Where you edit
(D) Where you create

12 M-files are
(A) None of these
(B) Standard ASCII text files
(C) Hex files
(D) Both of these
13 To draw 2-D plots we need
(A) All of these
(B) Xvalues
(C) Yvalues
(D) Style-option

14 To draw 3-D plot using MATLAB we must have
(A) All of these
(B) X and y
(C) Y and z
(D) X, y, z and ‘style-option’

15 To generate and plot the surface we need
(A) All of these
(B) linspace (-2,2,100)
(C) linspace (-3,3,50)
(D) linspace (-1,1,10)

16 What will be the answer by Computing $\sin^2 \pi/6 + \cos^2 \pi/6$ using MATLAB?
(A) 1.0000
(B) 1.1111
(C) 1.0011
(D) 3.0013

17 If $x = [6 6 6]$ & $y = [3 3 3]$ then $x+y$ will be
(A) [6 6 6]
(B) [5 5 5]
(C) [1 1 1]
(D) [3 3 3]
18 To plot a circle using MATLAB, the linspace must be declared as
(A) None of these
(B) linspace (1,4*pi, 10)
(C) linspace (1,2*pi,10)
(D) linspace (0,2*pi,100)

19 What will be the value of y-coordinates of a line with slope
m = 0.5 and the intercept c = -2 at the following x-coordinates,
x=0,1.5,3,4,5,7,9,10.
(A) [-6.0000 -1.2500 -0.5000 0 0.5000 1.5000 2.5000 6.0000]
(B) [-3.0000 -1.2500 -0.5000 0 0.5000 1.5000 2.5000 4.0000]
(C) [-2.0000 -1.2500 -0.5000 0 0.5000 1.5000 2.5000 3.0000]
(D) [-1.0000 -1.2500 -0.5000 0 0.5000 1.5000 2.5000 4.0000]

20 If x = [1 5 3 7] y = [0 2 8 7] then what will be the value of k, if k = x<y
(A) None of these
(B) [2 0 1 0]
(C) [1 1 1 0]
(D) [0 0 1 0]

21 If a = rand (12) and u = rand(10,1) will
(A) None of these
(B) Create 10 x 10 matrix A and 12 x 1 vector u
(C) Create 12 x 12 matrix A and 10 x 1 vector u
(D) Both of these

22 The equation to plot sine waves fplot must be
(A) None of these
(B) Fplot ('x.*sin(x)',[0 10*pi])
(C) Fplot ('x.*sin(x)',[0 11*pi])
(D) Fplot('x.*sin2(x)',[0 12*pi])
23. If \( x = [1; 2; 3] \) & \( y = [3 3 3] \) and \( z = [4 4 4] \) then \( x+y \) and \( x+z \) will be

(A) Error, [1 2 3]

(B) [4 5 6], [5 6 7]

(C) Error, Error

(D) [5 6 7], [4 5 6]

24. What will be the value of \( \text{factn} \) if \( n = 5 \) in following program

```plaintext
function factn = factorial (n);
    factn = 1;
    for k = n:-1:1
        factn = factn*k
    end
```

(A) 120

(B) 240

(C) 102

(D) 402

25. If \( A = [x \ y \ z; m \ n \ o; p \ q \ r] \), what will be \( A(3,1) \)?

(A) \( o \)

(B) \( x \)

(C) \( m \)

(D) \( r \)
26 What will be the answer by Computing $2^5 / (2^5 - 1)$?

(A) 4.2341
(B) 1.0323
(C) 1.0011
(D) 3.0013

27 If $x = [1 \ 2 \ 3] \& y = [3 \ 3 \ 3]$ and $z = [4 \ 4 \ 4]$ then $x+y$ and $x+z$ will be

(A) Error, Error
(B) $[4 \ 5 \ 6], [5 \ 6 \ 7]$
(C) Error, $[6 \ 6 \ 6]$
(D) $[5 \ 6 \ 7], [4 \ 5 \ 6]$

28 Which of the following command will create a vector $x$ with 10 elements linearly spaced between 0 & 100?

(A) `linspace (0,100,10)`
(B) `linspace (0,10,100)`
(C) `linspace (10,20,100)`
(D) `linspace (0,100,100)`