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

Subject Code No.: 2 9 9 9 Section No. (1, 2,.....) 1,2,3

(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 कर्या अंगेली अभेजनी सूचनाओ आपेक्ष
O.M.R. Sheet-ली पात्र जपे ये.

Important instructions to fillup O.M.R. Sheet is given on back side of the provided O.M.R. Sheet.
1 To modify MATLAB search path, we use
   (A) Editpath
   (B) Both of these
   (C) None of these
   (D) Path

2 Pwd
   (A) List content of current directory
   (B) Shows the current working directory
   (C) None of these
   (D) Change the current working directory

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

4 The difference between a function and a script is only
   (A) only a function requires inputs
   (B) only a script file can perform a series of commands
   (C) function variable names only have meaning within the, whereas script variables are available to other programs.
   (D) function file can be run from the command line
5 Which of the following MATLAB expression gives –1 ?

(A) cosd [pi]
(B) sind [3*pi/2]
(C) sin [-pi/2]
(D) cos [180]

6 MATLAB desktop is

(A) The command window
(B) Directory pane
(C) None of these
(D) The place where MATLAB puts u when u launch

7 The P-files are created with the

(A) Ncode command
(B) Pncode command
(C) None of these
(D) pcode command

8 Editor window is the place

(A) Where you edit
(B) Where you create
(C) All of these
(D) Where you write
9 M-files are
   (A) Hex files
   (B) Both of these
   (C) None of these
   (D) Standard ASCII text files

10 The command “what” will
   (A) Lists only M-, on the disk
   (B) Lists only Mex-files on the disk
   (C) Lists M-, Mat- and Mex- files on the disk
   (D) Lists Mat- on the disk

11 The ‘workspace pane’ will
   (A) Lists all values of variable
   (B) Both of these
   (C) None of these
   (D) Lists all variables

12 Whose will
   (A) show only workspace
   (B) both of these
   (C) None of these
   (D) lists variables currently in the workspace with their size
13 If \( x = [1 \ 5 \ 3 \ 7] \) and \( y = [0 \ 2 \ 8 \ 7] \) then what will be the value of \( k \), if \( k = x < y \)
   (A) \( [1 \ 1 \ 1 \ 0] \)
   (B) \( [0 \ 0 \ 1 \ 0] \)
   (C) None of these
   (D) \( [2 \ 0 \ 1 \ 0] \)

14 If \( a = \text{rand}(12) \) and \( u = \text{rand}(10,1) \) will
   (A) Create \( 12 \times 12 \) matrix \( A \) and \( 10 \times 1 \) vector \( u \)
   (B) Both of these
   (C) None of these
   (D) Create \( 10 \times 10 \) matrix \( A \) and \( 12 \times 1 \) vector \( u \)

15 The equation to plot sine waves \text{fplot} \) must be
   (A) \text{fplot} (‘\( x.*\text{sin}(x)\),[0 \ 11*\text{pi}]\)
   (B) \text{fplot}(’\( x.*\text{sin2}(x)\),[0 \ 12*\text{pi}]\)
   (C) None of these
   (D) \text{fplot} (‘\( x.*\text{sin}(x)\),[0 \ 10*\text{pi}]\)

16 To draw 2-D plots we need
   (A) Y values
   (B) Style-option
   (C) All of these
   (D) X values

17 To draw 3-D plot using MATLAB we must have
   (A) \( Y \) and \( z \)
   (B) \( X, y, z \) and ‘style-option’
   (C) All of these
   (D) \( X \) and \( y \)
18. To generate and plot the surface we need
   (A) linspace (−3,3,50)
   (B) linspace (−1,1,10)
   (C) All of these
   (D) linspace (−2,2,100)

19. What will be the answer by Computing \( \sin^2 \frac{\pi}{6} + \cos^2 \frac{\pi}{6} \) using MATLAB?
   (A) 1.0011
   (B) 3.0013
   (C) 1.0000
   (D) 1.1111

20. If \( x = [6 \ 6 \ 6] \) & \( y = [3 \ 3 \ 3] \) then \( x+y \) will be
   (A) [1 1 1]
   (B) [3 3 3]
   (C) [6 6 6]
   (D) [5 5 5]

21. To plot a circle using MATLAB, the linspace must be declared as
   (A) linspace (1,2*π,10)
   (B) linspace (0,2*π,100)
   (C) None of these
   (D) linspace (1,4*π, 10)

22. 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) [−2.0000 −1.2500 −0.5000 0 0.5000 1.5000 2.5000 3.0000]
   (B) [−1.0000 −1.2500 −0.5000 0 0.5000 1.5000 2.5000 4.0000]
   (C) [−6.0000 −1.2500 −0.5000 0 0.5000 1.5000 2.5000 6.0000]
   (D) [−3.0000 −1.2500 −0.5000 0 0.5000 1.5000 2.5000 4.0000]
23 Which of the following command will create a vector \( x \) with 10 elements linearly spaced between 0 & 100?

(A) \text{linspace (10,20,100)}

(B) \text{linspace (0,100,100)}

(C) \text{linspace (0,100,10)}

(D) \text{linspace (0,10,100)}

24 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) \[5 6 7], [4 5 6]\n
(C) Error, \[1 2 3]\n
(D) \[4 5 6], [5 6 7]\n
25 What will be the value of factn if \( n = 5 \) in following program

\[
\text{function factn = factorial (n)};
\]

\[
\text{factn = 1;}
\]

\[
\text{for k = n:-1:1}
\]

\[
\text{factn = factn*k}
\]

\[
\text{end}
\]

(A) 102

(B) 402

(C) 120

(D) 240
26 If \( A = [x \ y \ z; \ m \ n \ o; \ p \ q \ r] \), what will be \( A(3,1) \)?

(A) m 
(B) r 
(C) o 
(D) x 

27 What will be the answer by Computing \( 2^5 / (2^5 - 1) \)?

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

28 If \( x = [1 \ 2 \ 3] \) & \( y = [3 \ 3 \ 3] \) and \( z = [4 \ 4 \ 4] \) then \( x+y \) and \( x+z \) will be

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