قائمة الاسئلة

رياضيات عددية قسم الاشعة

1) The decimal number (34)10 is equivalent to the binary number
   1) + (100010)2
   2) - (100001)2
   3) - (111011)2
   4) - (100011)2
2) In the floating point system, the numbers are represented with a fixed number of
   1) + significant digits
   2) - decimal places
   3) - decimal numbers
   4) - binary numbers
3) The representation of the decimal number (4.25)10 in the 32-bit machine is
   1) - a- (01000110110100000000000000000000)2
   2) - b- (01000110110100000000000000000000)2
   3) - c- (10000011100010000000000000000000)2
   4) + d- (00000011100010000000000000000000)2
4) If , x= .2526384 is rounded to 6 digits, then
   1) - fl(x)=.252639
   2) + fl(x)=.252638
   3) - fl(x)=.2526381
   4) - none
5) If x= 3+4i, y= 1-4i and z= 4, then
   1) + z= x+y
   2) - z= x-y
   3) - z= xy
   4) - z=x/y
6) If A is a square matrix and A^T= - A, then A is called
   1) - orthogonal
   2) - symmetric
   3) + skew-symmetric
   4) - none
7) If A is a square matrix of order n and Ax=λx, then λ is
   1) + the eigenvalue of A
   2) - the eigenvector of A
   3) - the order of A
   4) - none
8) Newton's method guarantees the existence of a root for a nonlinear equation provided
   1) - continuity
   2) - differentiability
   3) + continuity and differentiability
   4) - none
9) The equation x^3 +x^2 -2 = 0 has a root in the interval
   1) + a- [-1,2]
   2) - b- [2,3]
   3) - c-[3,6]
   4) - d-[6,8]

10) If 2x+3y=3 and x+y=0, then
1) + x=-3 and y=3
2) - x=0 and y= 1
3) - x= 0 and y=5
4) - x= 1 and y =0

11) The derivative of sin x + 7x is
1) + cos x+ 7
2) - cos x - 7x
3) - sin x + x
4) - cos x -x

12) The integral of e^x + 2x is
1) - e^x + x^3 +c
2) - e^x + x +c
3) + e^x + x^2 + c
4) - e^x + 5x +c

13) In MATLAB, the zero matrix is given by the built in function
1) - plot
2) + zero
3) - eyes
4) - diff

14) In MATLAB, the usual matrix multiplication of the vectors x and y is indicated as
1) - x.*y
2) + x*y
3) - xy
4) - x+y

15) In MATLAB, 3-D mesh surface plots are drawn with the function
1) - eyes
2) - plot
3) + mesh
4) - trap

16) The set of all eigenvalues of a square matrix A is called the
1) + spectrum of A
2) - inverse of A
3) - determination of A
4) - none

17) MATLAB approximates the derivative of a function f with the use of
1) - trapez
2) - integ
3) - mesh
4) + diff

18) In MATLAB, if >>c=[3 -5 0 3]; then >>polyval(c,1) is
1) + 1
2) - 2
3) - 4
4) - 5

19) If x= 4+7i and y= 6+3i, then xy equals
1) - a- 6+50i
2) + b- 3+54i
3) - c- -2+10i

4) - d- 54 -10i

20) The binary system numbers depends on the base
1) - 0
2) - 1
3) + 2
4) - 10

21) The binary number (10011)2 is equivalent to the decimal number
1) - a- (7)10
2) - b- (17)10
3) + c- (19)10
4) - d- (21)10

22) In MATLAB, a column vector is given by
1) - [1: 5: -4]
2) - [1 5 -4]
3) - [1, 5, -4]
4) + [1; 5; -4]

23) If a square matrix A is of order 3, then it has
1) + three rows and three columns
2) - two rows and four columns
3) - three rows and four columns
4) - nine rows and three columns

24) If x = 9 + 5i and y = 1 + 2i, then x - y equals
1) + a- 8+ 3i
2) - b- 10 + 30i
3) - c- 11 - 7i
4) - d- -8 +10i

25) The similarity transformation of a square matrix A is the transformation from A to
1) + P A P^-1, P is any invertable matrix
2) - P A P^-1, P is the invers of A
3) - P A P^-1, P is the transpose of A
4) - none

26) The second leftmost bit in the internal representation of a 32-bit word length microcomputer indicates to the sign of the
1) - base
2) + exponential
3) - mantissa
4) - none

27) For a binary computer with k bits in the mantissa, the bound on the relative error for rounding is
1) + a- 2^-k
2) - b- 2^k
3) - c- 10^-k
4) - d- 10^k

28) If f is a continuous function on [a,b] such that f(a)f(b)<0, then the method that guarantees the existence of x in(a,b) such that f(x)=0 is called
1) - Newton's method
2) + Bisection method
3) - Sectan method
4) - none

29) In MATLAB, if x=[6 2 0 -2]; and y=[3; 0; -8; 0]; then x*y equals

1) - 2
2) - 12
3) + 18
4) - 22

30) The solution of the second order differential equation y"=12x+ cos x + e^x is
1) + 2x^3-cos x + e^x + c1x + c2
2) - x^2-cos x + e^x + c1x + c2
3) - x^5+ cos x + xe^x + c1x + c2
4) - none

31) If f(x)= 8x-5, then f(2)=
1) - 8
2) - 9
3) - 10
4) + 11

32) If a function f is defined on R (set of real numbers) as: f(x)=x+2, the f is
1) + increasing
2) - decreasing
3) - both
4) - none

33) cos 0
1) - 0
2) - 0.5
3) + 1
4) - none

34) The plot command plot(x,y,'r+:') in MATLAB will result the required graph in
1) + red color
2) - grean color
3) - black color
4) - white color

35) The Taylor series for a given function f on [a,b] with a truncation error Rn+1 requiers f to have
1) + n+1 continuous derivatives
2) - n derivatives not necessary continuous
3) - n-1 derivatives
4) - none

36) The function f defined on R (set of real numbers) as: f(x)= 3x-1 is
1) - not linear
2) + linear
3) - quadratic
4) - cubic

37) If z= 4+3i, then |z|=
1) - 2
2) - 3
3) - 4
4) + 5

38) The conjugate of 5+9i is
1) - 5-5i
2) + 5-9i
3) - 5+9i
4) - none

39) In IEEE the based exponent has
1) - 6 bits
2) - 7 bits
3) + 8 bits
4) - 9 bits

40) A function f from a non-empty set A to a non-empty set B is a rule that assigns to each element in A …….in B
1) + exactly one element
2) - some elements
3) - not required any element
4) - none