

**FAR WESTERN UNIVERSITY**  
**Faculty of Science and Technology**  
**Department of Computer Science and Information Technology**  
**Entrance Examination BIT 2082**  
**Time: 2Hrs**

Attempt all the questions.

1×100=100

**Mathematics**

1. The negation of “some students are honest “is
  - a. No student is honest
  - b. All students are honest
  - c. Some students are not honest
  - d. Not All students are honest
2. The set of **beautiful girls in a class** is
  - a. Empty set
  - b. singleton set
  - c. a finite set
  - d. not a well-defined set
3. If  $n(U) = 105$ ,  $n(A) = 70$  and  $n(B) = 55$ , then the greatest value of  $A \cup B$  is
  - a. 105
  - b. 80
  - c. 100
  - d. 110
4. For any negative number  $x$ ,  $|x|$  is
  - a.  $x$
  - b.  $-x$
  - c.  $x$  or  $-x$
  - d. not defined
5. The value of  $\log_e 10$  is
  - a. An integer
  - b. a rational number
  - c. an irrational number
  - d. prime number
6. The domain of the function  $y = x^2 + 10x + 11$  is
  - a.  $(-\infty, \infty)$
  - b.  $(0, \infty)$
  - c.  $(-2, -3)$
  - d. none
7.  $e$  and  $\pi$  are
  - a. both rational numbers
  - b. both irrational numbers
  - c. one rational and one irrational number
  - d. both are integers
8. If  $y = \cos x$  then  $y$  is
  - a. Even function
  - b. odd function
  - c. neither even nor odd function
  - d. symmetric function
9. The AM between two numbers 120 and 150 is
  - a. 160
  - b. 150
  - c. 140
  - d. 135
10. If  $x, y, z$  and  $u$  are in H.P. then
  - a.  $xz > yu$
  - b.  $xu > yz$
  - c.  $xu < yz$
  - d.  $xz < yu$
11. For a matrix  $A$ ,  $A^2 = \begin{bmatrix} 9 & 0 \\ 0 & 9 \end{bmatrix}$  then  $A$  is equal to
  - a.  $2I$
  - b.  $-2I$
  - c.  $\pm 3I$
  - d.  $3I$
12. From the matrix equation  $XY = XZ$  we conclude that  $Y = Z$  provided
  - a.  $X$  is singular
  - b.  $X$  nonsingular
  - c.  $X$  is symmetric
  - d.  $X$  is square
13. The value of  $\begin{vmatrix} a+b & b+c & c+a \\ c & a^2 & b \\ 1 & 1 & 1 \end{vmatrix}$ 
  - a. 0
  - b. 1
  - c. 3
  - d. 4
14. The polar form of  $-1 - i$  is
  - a.  $\sqrt{2} (\cos 315^\circ + i \sin 315^\circ)$
  - b.  $\sqrt{2} (\cos 45^\circ + i \sin 45^\circ)$
  - c.  $\sqrt{2} (\cos 135^\circ + i \sin 135^\circ)$
  - d.  $\sqrt{2} (\cos 225^\circ + i \sin 225^\circ)$

15. In a  $\Delta ABC$  if  $A = 30^\circ$ ,  $B = 45^\circ$  and  $a = 6\sqrt{2}$  then  
 a.  $C = 105^\circ$       b.  $b = 10$       c.  $c = 5$       d. all of the above
16. The period of  $\sin^2 x$  is  
 a.  $\pi^2$       b.  $\pi/2$       c.  $\pi$       d. none
17. The equation of normal to the circle  $x^2 + y^2 - 5 = 0$  at a point  $(3, 6)$  is  
 a.  $x + 2y = 0$       b.  $x - 2y = 0$       c.  $2x - y = 0$       d.  $x + 2y + 5 = 0$
18. The vectors  $2\vec{i} - 2\vec{j} + 3\vec{k}$  and  $3\vec{i} + 6\vec{j} + 2\vec{k}$  are  
 a. collinear      b. parallel      c. perpendicular      d. none of the above
19. The magnitude the vector  $\vec{i} + 2\vec{j} + 3\vec{k}$  is  
 a. 4      b. 5      c.  $\sqrt{14}$       d. 14
20. A person has 2 children's. That probability that all three are girls is  
 a. 0      b. 1      c.  $1/4$       d.  $1/8$
21. The derivative of  $\log(\sec x)$  is  
 a.  $\operatorname{cosec} x$       b.  $\cot x$       c.  $\tan x$       d.  $\sec x$
22. Which of the followings is the discontinuity of the function  $f(x) = \frac{x-2}{x^2-1}$ ?  
 a. 2      b. -1      c. 1      d. both b and c
23. The absolute maxima and minima of the function  $f(x) = 4x - \frac{x^2}{2}$  in the interval  $[-2, 2]$  are  
 a. 4, -2      b. 9, 0      c. 6, -10      d. 12, -3
24. If  $y = \cot^{-1} x$  then  $\frac{dy}{dx}$  is  
 a.  $1+x^2$       b.  $1-x^2$       c.  $\frac{1}{1-x^2}$       d.  $\frac{-1}{1+x^2}$
25. The value of  $\lim_{x \rightarrow \pi/2} \frac{\cos 3x}{\cos x}$  is  
 a.  $\frac{-1}{3}$       b.  $\frac{1}{3}$       c. -1      d. 1
26. The velocity of the particle at  $t = 2$  sec when its distance from a fixed point is  $3t^2 - t + 7$  is  
 a. 11 m/sec      b. 20 m/sec      c. 25 m/sec      d. 15 m/sec
27. The value of  $\int \frac{1}{\sqrt{a^2+x^2}} dx$  is  
 a.  $\sin^{-1} x + C$       b.  $\sec^{-1} x + C$       c.  $\sinh^{-1} x + C$       d.  $\sin^{-1} x/a + C$
28. Which of the following equation is **NOT** homogeneous differential equation  
 a.  $x dy + y^2 dx = 2$       b.  $x^2 dx + y^2 dy = 0$       c.  $x^2 dx + xy dy = 0$       d.  $\frac{dy}{dx} + \frac{x}{y} = 0$
29. The order of the differential equation  $\left(\frac{d^2 y}{dx^2}\right)^3 + 2\left(\frac{dy}{dx}\right)^2 + 3\frac{dy}{dx} = 0$  is  
 a. 1      b. 2      c. 3      d. 0
30. The area bounded by the curve  $y = \ln x$  and the ordinates at  $x = 1$  and  $x = e$  is  
 a. 1      b. e      c.  $e - 1$       d.  $e + 1$

### General Knowledge

31. Which river is the longest in the world?  
 a. Amazon      b. Mississippi      c. Nile      d. Yangtze

32. What gas is used to extinguish fires?  
 a. Oxygen                      b. Nitrogen                      c. Carbon dioxide                      d. Hydrogen
33. For which of these disciplines Nobel Prize is awarded?  
 a. Physics, Chemistry                      b. Physiology                      c. Medicine                      d. All of the above
34. How many bones are in the body of an adult human?  
 a. 330                      b. 206                      c. 250                      d. 210
35. Which animal is a symbol of peace and neutrality?  
 a. Polar bear                      b. White tiger                      c. White lion                      d. White pigeon
36. Where does Nepal rank in the world in ginger production?  
 a. 4<sup>th</sup>                      b. 11<sup>th</sup>                      c. 56<sup>th</sup>                      d. 7<sup>th</sup>
37. In Which country did the game of chess originate?  
 a. China                      b. England                      c. India                      d. Russia
38. Which is the largest lake in Nepal?  
 a. Phewa Tal                      b. Rara Tal                      c. Tilicho Tal                      d. Begnas Tal
39. What percentage of the world's total area does Nepal occupy?  
 a. 0.03%                      b. 0.003%                      c. 0.3%                      d. 0.05%
40. How many local levels are there in Kanchanpur district?  
 a. 7                      b. 8                      c. 9                      d. 10
41. Find the odd one out from the given set of numbers. 14, 28, 35, 46, 56, 84  
 a. 56                      b. 84                      c. 35                      d. 46
42. In a certain code "CODE" is written as "DPEF". How is "DEFENCE" written in that code?  
 a. KWMCJFL                      b. ELDFSAP                      c. EFGFODF                      d. HRAOSCV
43. If 'white' is called 'yellow', 'yellow' is called 'blue', 'blue' is called 'red', 'red' is called 'black', 'black' is called 'violet' and 'violet' is called 'green', then what would be the colour of light emitting from bulb?  
 a. Blue                      b. Red                      c. Yellow                      d. Black
44. If the letters of the word "PRODUCT" are arranged alphabetically, then which letter would be farthest from the second letter of word?  
 a. T                      b. R                      c. U                      d. P
45. Milly introduced a boy as the son of the only daughter of the mother of her maternal uncle. How is Milly related to that boy?  
 a. Nephew                      b. Son                      c. Brother                      d. Sister
46. BFNM : EIQP :: RBGJ : ?  
 a. GHJK                      b. WXYZ                      c. UEJM                      d. ABCD
47. In a sequence, you observe that each term is obtained by adding 3 to the previous term. If the sequence starts with 5, what is the fifth term?  
 a. 11                      b. 12                      c. 13                      d. 17



63. If I \_\_\_\_\_ the answer, I would tell you now.  
 a. know                      b. had known                      c. knew                      d. will know
64. Let's go, \_\_\_\_\_?  
 a. shall we                      b. don't we                      c. do we                      d. won't we
65. \_\_\_\_\_ you apologize, I won't forgive you.  
 a. When                      b. Unless                      c. Because                      d. Although
66. Rewrite the sentence without 'because': **He is late because he missed the bus.**  
 a. He is late although he missed the bus.                      b) He is late so he missed the bus.  
 c. He is late and he missed the bus.                      d. He is late due to missing the bus.
67. Identify error: Its a beautiful day.  
 a. Its should be It's                      b. It is correct                      c. Missing comma after Its                      d. Its should be Its
68. Which of the following is NOT an adverb?  
 a. Rarely                      b. Quickly                      c. Sad                      d. Outside
69. Which sentence has **two adjectives**?  
 a. She wore a beautiful red dress.                      b. They walked slowly to the store.  
 c. He is always kind.                      d. We went inside quietly.
70. Choose the correct sentence with a preposition of time:  
 a. She sat beside me.                      b. He arrived at 7 p.m.  
 c. They walked through the tunnel.                      d. The book is on the shelf.
71. She is ..... engineer.  
 a. the                      b. a                      c. an                      d. no article
72. He \_\_\_\_\_ never late for class.  
 a. is                      b. are                      c. am                      d. be
73. I \_\_\_\_\_ never seen such a beautiful sunset.  
 a. have                      b. has                      c. had                      d. having
74. The dog barked ..... the mailman arrived.  
 a. so                      b. as far as                      c. when                      d. now
75. Choose the correct sentence:  
 a. I wish I can fly.    b. I wish I could fly.                      c. I wish I will fly.                      d. I wish I flying.
76. You \_\_\_\_\_ finish your homework before playing.  
 a. might                      b. can't                      c. may                      d. must
77. Identify the sequence marker: \_\_\_\_\_ **I entered, the meeting started.**  
 a. Before                      b. When                      c. After                      d. Then
78. If I had known, I \_\_\_\_\_ told you.  
 a. will have                      b. would have                      c. would                      d. will
79. The scissors \_\_\_\_\_ on the table.  
 a. is                      b. are                      c. was                      d. be
80. A main clause must have a .....  
 a. subject                      b. verb                      c. subject and verb                      d. none of those

## **Computer Science**

81. Which of the following is logical operator?  
a. &                      b. =                      c. &&                      d. =
82. Who is the father of Computers?  
a. James Gosling    b. Charles Babbage                      c. Dennis Ritchie                      d. Bjarne Stroustrup
83. Which of the following computer language is written in binary codes only?  
a. pascal                      b. machine language                      c. C                      d. C#
84. Which of the following is the brain of the computer?  
a. Central Processing Unit                      b. Memory                      c. Arithmetic and Logic unit                      d. Control unit
85. RAM is also called as  
a. Virtual memory                      b. Volatile memory                      c. Non volatile memory                      d. Cache memory
86. CPU stands for  
a. Central Planning Unit                      b. Computer Planning Union  
c. Computer Processing Unit                      d. Central Processing Unit
87. If you want to copy a portion of the text then you need to use  
a. Control & C                      b. Command & C                      c. Control & V                      d. Command and V
88. Which one is not an operating system?  
a. Windows                      b. Linux                      c. Unix                      d. LaTeX
89. Which device is used to input data into a computer?  
a. Printer                      b. Monitor                      c. Keyboard                      d. Speaker
90. What is the main function of an operating system?  
a. Perform calculations                      b. Manage hardware and software resources  
c. Browse the internet                      d. Create documents
91. Which file format is used for images?  
a. .docx                      b. .xlsx                      c. .jpg                      d. .pptx
92. Which key is used to delete the character to the left of the cursor?  
a. Enter                      b. Backspace                      c. Delete                      d. Shift
93. What does LAN stand for?  
a. Local Area Network                      b. Large Area Network  
c. Local Access Network                      d. Long Area Network
94. Which software allows users to create text documents?  
a. Microsoft PowerPoint    b. Microsoft Access                      c. Microsoft Excel                      d. Microsoft Word
95. VDU stands for \_\_\_\_\_  
a. Virtual Display Unit                      b. Visual Display Unit  
c. Virtual Detection Unit                      d. Visual Detection Unit
96. The ALU gives the output of the operations and the output is stored in the \_\_\_\_\_  
a. Memory Devices                      b. Registers                      c. Flags                      d. Output Unit
97. Which of the following is not a point-and-draw device?  
a. Keypad                      b. Trackball                      c. Touch screen                      d. Mouse

98. The physical devices of a computer:  
a. Software      b. Package      c. Hardware      d. System Software
99. In a spreadsheet, letters are used to represent \_\_\_\_\_  
a. Cells      b. Rows      c. Blocks      d. Columns
100. Any system that uses the HTTP protocol is called \_\_\_\_\_  
a. Web Browser      b. Web Server      c. WWW      d. TCP/IP

**GOOD LUCK**