Tribhuvan University

Institute of Science and Technology

4 Years Bachelor in Computer Science and Information Technology

Entrance Examination

Model set 5

English

1. _____ was present at the party.
   a. All but she b. All but herself
   c. All but her d. All but myself
2. Quinine is a drug ____ malaria
   a. For b. to
   c. Against d. on
3. During rainy season, the Koshi was
   a. Overflew b. Overflown
   c. Overfly d. Overflying
4. He is as stubborn as a _____
   a. Child b. bull
   c. Donkey d. mule
5. Once you signed ____ the paper, you cannot go back.
   a. By b. in
   c. With d. out
6. The principal told the class____ without permission
   a. Not to enter b. Not to have entered
   c. Not entering d. Do not enter
7. I must go____ before the shops are closed
   a. Shopping b. To shop
   c. To shopping d. Shop
8. A horse neighs so as goats ___
   a. Howl b. Roar
   c. Bleat d. Grunt
9. The teacher has authority ___ his students
   a. To b. Over
   c. With d. For
10. This is the place ____ we lived in
    a. Where b. Which
    c. When d. How
11. They have gone shopping,____?
    a. Haven't they b. didn't they
    c. Had they d. Have they
12. Only after meeting him,___ him well
    a. Did I know b.Had I know
    c. Had I known d.I know
13. Which of the following is not a synonym of splendid
    a. Superb b. Sordid
    c. Excellent d. Marvelous

14. Feminine of deer is
    a. Do b. Doa
    c. Doe d. Doae
15. ____ I open the present for you?
    a. Would b. Must

c. Shall d. Going to

16. He is ___ man of high esteem
    a. An b. a
    c. Some d. none
17. He has a remarkable ____ for the arts.
    a. Talence b. Talency
    c. Talent d. Talents
18. Snow is falling ____north of the mountains
    a. Into b. Over
    c. Off d. Down
19. I don't think he ___ come to the meeting tomorrow
    a. Would b. Shall
    c. Used to d. Might
20. He is ___one eyed man
    a. The b. a
    c. An d. none
21. the study of the mountains
    a. geology b. geography
    c. chromatics d. orology
22. the opposite of the word pernicious is
    a. beneficial b. advantageous
    c. satisfactory d. fair
23. Grandma is ____ the visit of her grand children.
    a. Looking forward b. Looking into
    c. Looking for d. Looking forward to
24. Shyam has done this work and ____.
    a. So did I b. So am I
    c. So have I d. Is has I
25. He____ in plane crash
    a. Died b. Has died
    c. Have died d. In dying

Physics

26. The dimension ($M^1L^2T^{-2}$) refers to a physical quantity that has unit:

a. Joule b.Pascal c.Newton d.Watt

27. Which of the following is not a vector quantity
    a. Angular momentum b.Magnetic intensity
    c. Torque d.Energy
28. Whatever may be the direction of the two forces 6N and 2N acting on a body of mass 2Kg,the minimum acceleration of the body cannot be less than
    a. $4m/s^2$ b.$2m/s^2$ c.$2.5m/s^2$ d.$3m/s^2$
29. A body is moved through certain distance from rest under constant force. Then K.E. gained by the body is
    c. Directly proportional to its mass
    d. Inversely proportional to its mass
    e. Directly proportional to square root of mass
    f. Independent of its mass
30. A particle moves in a circle of radius 25cm at 2 rev/sec, the acceleration of the particle in m/s^2 is
    a. π^2 b.$4\pi^2$ c.$2\pi^2$ d.$8\pi^2$
31. The absolute zero temperature is
    a. -273°C b.-273°K c.-273.14°C d.-273.16°C
32. Melting point of ice
    a. Decrease with the decrease of pressure
    b. Increase with the increase of pressure
    c. Is independent of pressure

d. Decrease with the increase of pressure

33. All gas at same temperature have same
    a. K.E. b. Density c. RMS speed d. None of the above
34. The rate of loss of heat from a body depends on the
    a. Temperature of the body
    b. Excess temperature of body over the surrounding
    c. Thermal capacity of the body
    d. The temperature of the surrounding
35. The energy of molecular motion is expressed as:
    a. Friction b. Internal energy
    c. Temperature d. Potential energy
36. The velocity of sound in air is independent of change in
    a. Pressure b. Density c. Temperature d. Humidity

37. Sound waves having the following frequencies are audible to human beings
    a. 5c/s b.27000c/s c.5000c/s d.50,000c/s
38. When a mirror is rotated through an angle 30°keeping incident ray constant then reflected ray is rotated through an angle
    a. 25° b.60° c.45° d.90°
39. When light passes through glass slab
    a. Wavelength decreases b. Wavelength increases
    c. Velocity increases d. Frequency decreases
40. In an interference pattern minima are obtained when phase difference between interfering waves is
    a. $\pi/2$ b.2π c. $n\pi/2$ d.$(2n-1)\pi$
41. X-rays are produced by energy changes in
    a. Electrons close to the nucleus b. Electrons far from the nucleus
    c. Electrons and protons d. The nucleus
42. When a woolen sweater worm over a nylon shirt is removed. Sparking is observed due to
    a. Static electricity b. Current electricity
    c. None d. Both
43. The potential difference between the two charged parallel plates separated by 1mm is 100V, then the electric field produced is
    a. 10^{-5}V/m b.10^{5}V/m c.10^{3}V/m d.10^{-3}V/m
44. The dielectric constant $\in_r$ is given by the relation
    a.$\in_r = \in . \in_0$ b. $\in_r = \sqrt{\in . \in_0}$ c.$\in_r = \frac{\in}{\in_0}$ d.None
45. In a parallel plate capacitor force on each plate is
    a.$q^2/\varepsilon o$ b.$q^2/A\varepsilon o$ c.$q^2/2A\varepsilon o$ d. Zero
46. If the power of a heater is 1W and 1A of current is passed through it. Then find the resistance
    a. 4.2Ω b.4200Ω c.1Ω d.0.1Ω
47. Wheatstone measures
    a. Potential b. emf c. Resistance d. Current
48. S.I. unit equivalent to the magnetic field Tesla(T) may be
    a. Vsm^2 b.Vsm^{-2} c. $Vs^{-1}m^2$ d.$Vs^{-1}m^{-2}$
49. Which of the following is used in the core of an electromagnet
    a. Soft magnet b. Soft steel c. Soft aluminum d. Soft zinc
50. A magnet is moved towards a coil through a certain distance slowly in one case and quickly in second case. The emf induced is
    a. More in first case b. More in second case
    c. Equal in both cases d. Zero in both case

Chemistry

51. Deliquescent salts can be used as
    a. Oxidizing agent b. Cleansing agent
    c. Drying agent d. Antiseptic
52. In the ideal gas equation PV=nRT, the value of gas constant depend only on

a. The pressure of the gas b. The units of measurement
c. The nature of the gas d. The volume of the gas

53. Equal weights of methane and hydrogen are mixed in an empty vessel at 25°C. The fraction of total pressure exerted by hydrogen is
a. 1/2 b. 1/3 c. 1/9 d. 8/9
54. Equivalent mass of a bivalent metal is 32.75 molecular mass of its chloride is
a.68.25 b.103.75 c.101.0 d.136.5
55. Two electrons in an orbital are distinguished by the quantum number
a. n b. l c. m d. s
56. The bond in HCl molecule in the vapor state is an example of
a. Non polar bond b. Polar covalent bond
c. Ionic bond d. Pure covalent bond
57. Electron affinity is maximum in the case of
a. Cl b.F c.B d.N
58. Which of the following species can act both as an acid and as a base
a. H30+ b.HSO4- c.HCO3- d.Cl-
59. In which of the following reaction is H_2 acting as oxidizing agent?
a. $CuO+H_2 \rightarrow Cu+H_2O$ b. $Ca+H_2 \rightarrow CaH_2$
c. $H_2+Cl_2 \rightarrow HCl$ d. $N_2+3H_2 \rightarrow 2NH_3$
60. When 100 ml of 1M solution of H_2SO_4 and 20 ml of 5M NaOH are mixed, the resulting solution would be
a. Acidic b. Weakly alkaline c. Strongly alkaline d. Neutral
61. Which pure substance will not conduct electricity?
a. Liquefied HCl b. Molten NaCl
c. Molten KOH d. Liquid Na
62. The oxidation of SO_2 by O_2 to form SO_3 is an exothermic reaction. Production of SO_3 will be maximum
a. If temperature is raised
b. If temperature is decreased
c. If concentration of SO_2 is decreased
d. If concentration of O_2 is decreased

63. The process which is catalyzed by one of the product is known as
a. Acid catalysis b. Positive catalysis
c. Anti-catalysis d. Auto-catalysis
64. In electrolysis of $CuSO_4$ solution between Pt-electrodes
a. O_2 is liberated at anode b. H_2 is liberated at cathode
c. SO_2 is liberated at anode d. Cu++ is discharged at anode
65. Precipitation takes place when the ionic product is
a. Zero b. Unity
c. Less than solubility product d. More than solubility product
66. Living in the atmosphere of Carbon monoxide is dangerous because it
a. Combines with hemoglobin and makes it incapable to absorb O_2
b. Dries up blood
c. Combines with oxygen present inside to form CO_2
d. Reduces organic matter of tissues
67. Yellow color of HNO_3 is due to the presence of
a.N_2O b.NO c.NO_2 d.N_2O_5
68. When SO_2 is passed through acidified solution of H_2S
a. H_2SO_3 is formed b. H_2SO_2 is formed
c. H_2SO_4 is formed d. S is precipitated
69. The compound having highest boiling point
a. HF b. HCl c. HBr d.HI
70. Which of the following processes involves the smelting process?
a. $Al_2O_3.2H_2O \rightarrow Al_2O_3+2H_2O$ b.$ZnCO_3 \rightarrow Zn+CO_2$
c. $2PbS+O_2 \rightarrow 2PbO+2SO_2$ d. $Fe_2O_3+3C \rightarrow 2Fe+3CO$
71. In Down's process for manufacture of metallic sodium a small amount of $CaCl_2$ is added to
a. Increase the electrical conductivity
b. Lower melting point of NaCl

c. Increase the temperature of electrolysis
d. Stabilize the metallic sodium

72. Which of the following is malachite ore
a. Cu_2S b.Cu_2O c. $CuCO_3$ d. $CuCO_3.Cu(OH)_2$
73. Cosmetic powders and zinc ointments contain
a. ZnO b. $ZnCO_3$ c. $Zn(NO_3)_2$ d. $ZnSO_4$
74. Rusting of iron in moist air involves
a. Loss of electrons by Fe b. Gain of electrons by Fe
c. Dehydration of Fe d. Hydration of Fe
75. Aromacity of benzene is due to
a. Ring b. Hyper conjugation
c. Three double bonds d. Delocalization of electrons

Mathematics

76. If A and B are two sets, and ϕ is null set, which of the following is true?
a. A ⊆A∩B b. B ⊆ A∩B c. AUB⊆A∩B d. ϕ ⊆ A∩B
77. If x and y are any two real numbers, which of the following is true?
a. x<y→-x>-y b. –x<y c.-y<x d. x=y
78. Which of the following is true?
a. The set of natural numbers is dense
b. The set of whole numbers is dense
c. The set of integers is dense
d. The set of real numbers is dense
79. When is the assertion "|x|<a↔-a<x<a" true?
a. xЄIR,aЄIR b. xЄIR,aЄC
c.xЄC,aЄIR d.xЄIR,a>0,aЄIR
80. Which of the following is false?
a. The statement pV~p is always true
b. The statement p^~p is always true
c. The statement p is neither true nor false
d. The statement ~p is either true or false
81. When is a function f: A→B injective?
a. For some x,yЄA,x≠y→f(x)≠f(y)
b. For any x,yЄA,x=y→f(x)≠f(y)
c. For any x,yЄA,x≠y→f(x)≠f(y)
d. For any x,yЄA,x≠y→f(x)=f(y)
82. Which of the following is true about the graph of a function f: IR→IR?
a. A line parallel to x-axis must meet the graph
b. A line parallel to x-axis must not meet the graph
c. A line parallel to y-axis must not meet at two points of the graph
d. A line parallel to y-axis must not meet the graph
83. If a, x, y are real numbers a>0 and a^x=y, then which of the following is true?
a. $\log_x y=a$ b.$\log_a y=x$ c. $\log_a x= y$ d.$\log_y a=x$
84. Which of the following is a transcendental function?
a. $y=3x^2-5$ b. $y=\frac{2x}{x^2+5}$ c. y=3 d. y=sinx
85. e^x-e^{-x}=…….
a. coshx b. sinhx c.2sinhx d. 2coshx
86. When is a function f(x) increasing?
a. $x_1<x_2\rightarrow f(x_1)>f(x_2)$ b. $x_1>x_2\rightarrow f(x_1)>f(x_2)$
c. $x_1<x_2\rightarrow f(x_2)>f(x_1)$ d. $x_1>x_2\rightarrow f(x_1)<f(x_2)$
87. If sinx=k, and θ is smallest of such x, then
a. x=2nπ±θ b. x=nπ+θ c. x=nπ+(-1)nθ d. $x=n\pi+(-1)^n\theta$
88. Which of the following is true?
a. Cosine law is not related with Pythagoras theorem

b. Cosine law is a corollary of Pythagoras theorem
c. Pythagoras theorem is a corollary of cosine law
d. Pythagoras theorem holds for any triangle

89. When a triangle is completely solved?
a. When all angles are given b. When a side is given
c. When two sides and angle is given d. When two sides are given

90. If a, b, c, d, …… are in harmonic sequence, and k is a constant, which of the following is m harmonic sequence?
a. a+k,b+k,d+k,….. b. a-k,b-k,d-k,……..
c. a^k,b^k,d^k,…. d.ak,bk,dk,….

91. $1+\frac{1}{2}+\frac{1}{4}+\frac{1}{8}+\cdots$
a. ∞ b. Undefined c. 4 d. 2

92. If A is a 3x2 matrix, B is a 2x3 matrix, which of the following is true?
a. A+B can be obtained b. BA cannot obtained
c. AB and BA have different orders d. AB=BA

93. If $A=(a_{ij})_{3x3}$ matrix, M_{ij} is minor of a_{ij}, A_{ij} is cofactor of a_{ij}, Which of the following is false?
a. $a_{11}A_{11}+a_{12}A_{12}+a_{13}A_{13}=|A|$ b. $a_{11}A_{11}-a_{21}A_{21}+a_{31}A_{31}=|A|$
c.$a_{11}M_{11}-a_{21}M_{21}+a_{31}M_{13}=|A|$ d. $a_{11}A_{12}+a_{21}A_{22}+a_{31}A_{32}=|A|$

94. Which of the following about system of linear equations is true?
a. $(A+B)'=A+B'$ b. $(A')'=A$ c.$(AB)'=B'A'$ d.$(BA)'=A'B'$

95. Which of the following about system of linear equation is true?
a. A consistent system has no solutions
b. A consistent and dependent system has a unique solution
c. An independent system always has a unique solution
d. None of the above

96. Which of the following is true about a complex number z?
a. z>0 b. z<0 c. z=0 d. None of the above

97. If w is a complex cube root of unity, which of the following is false?
a. $w^5=1$ b.$1+w+w^2=0$ c. $w^2=w'$ d. None of the above

98. If a, b, c are real $ax^2+bx+c=0$ roots of the equations are…….. if $b^2-\Delta ac<0$
a. Equal b. Real
c. Real but unequal d. Complex conjugates

99. For which value of k the line y=x+k does not pass through origin
a. Positive b. Negative
c. Both +ve and –ve d. None of the above

100. Angle between two straight lines given by $x^2-y^2=0$ is
a. 90° b.180° c. Unknown d. None of the above

Answers

1 a	2a	3d	4a	5 b	6a	7a	8c	9b	10a
11a	12a	13b	14c	15c	16b	17c	18b	19a	20b
21b	22a	23d	24c	25a	26d	27a	28b	29d	30a
31d	32d	33d	34b	35b	36c	37c	38b	39a	40d
41d	42b	43b	44 c	45c	46c	47c	48b	49b	50b
51b	52b	53 d	54d	55d	56c	57a	58b	59 b	60a

61c	62b	63 d	64 a	65d	66a	67d	68c	69d	70 d
71b	72d	73b	74a	75d	76d	77a	78c	79a	80c
81d	82c	83a	84 d	85c	86b	87d	88c	89a	90a
91d	92c	93d	94b	95b	96a	97c	98b	99 c	100 a