Tribhuvan University
Institute of Science and Technology
4 Years Bachelor in Computer Science and Information Technology
Entrance Examination
Model set 1

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. The principal told the class____ without permission
   a. Not to enter b. Not to have entered
   c. Not entering d. Do not enter
6. I must go____ before the shops are closed
   a. Shopping b. To shop
   c. To shopping d. Shop
7. A horse neighs so as goats ___
   a. Howl b. Roar
   c. Bleat d. Grunt
8. The teacher has authority ___ his students
   a. To b. Over
   c. With d. For
9. This is the place ____ we lived in
   a. Where b. Which
   c. When d. How
10. They have gone shopping,____?
    a. Haven't they b. didn't they
    c. Had they d. Have they
11. Only after meeting him,___ him well
    a. Did I know b.Had I know
    c. Had I known d.I know
12. Which of the following is not a synonym of splendid
    a. Superb b. Sordid
    c. Excellent d. Marvelous

13. Feminine of deer is
    a. Do b. Doa
    c. Doe d. Doae
14. ____ I open the present for you?
    a. Would b. Must
    c. Shall d. Going to
15. He is ___ man of high esteem
    a. An b. a
    c. Some d. none
16. He has a remarkable ____ for the arts.
    a. Talence b. Talency
    c. Talent d. Talents
17. Snow is falling ____north of the mountains
    a. Into b. Over
    c. Off d. Down
18. I don't think he ___ come to the meeting tomorrow
    a. Would b. Shall
    c. Used to d. Might
19. He is a one eyed man

a. The b. a
c. An d. none

20. the study of the mountains
    a. geology b. geography
    c. chromatics d. orology
21. the opposite of the word pernicious is
    a. beneficial b. advantageous
    c. satisfactory d. fair
22. Grandma is ____ the visit of her grand children.
    a. Looking forward b. Looking into
    c. Looking for d. Looking forward to
23. Shyam has done this work and ____.
    a. So did I b. So am I
    c. So have I d. Is has I
24. He____ in plane crash
    a. Died b. Has died
    c. Have died d. In dying

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Maths

26. If A and B are two sets, A-B is equal to
    a. $A \cap \bar{B}$ □
    b. $A \cup \bar{B}$
    c. $\bar{A} \cap B$
    d. $\bar{A} \cup B$
27. If the ordered pairs (x+y,1) and (2,2x-y) are equal then
    d. x=0 y=1
    e. x=1 y=0
    f. x=1 y=1
    g. x=1 y=-1
28. The range of the function $y=x^2-6x+6$ is:
    d. $(-3,\infty)$
    e. $[-3,\infty)$
    f. $(0,\infty)$
    g. $[0,\infty)$
29. What is the value of log a $\sqrt{a\sqrt{a\sqrt{a^2}}}$
    d. 4
    e. 3
    f. 2
    g. 1
30. The value of cosA + cos(120°+A) + cos(120°-A) is
    a. 0
    b. 1
    c. -1
    d. 2
31. Solve : $2\cos^2 x - 5\cos x + 2 = 0$ for $180° < x < 360°$
    a. 300°
    b. 60°
    c. 240°
    d. 360°
32. In triangle ABC, if a = 3, b = 4 and c = 5, find $\cos \frac{A}{2}$
    a. $\frac{2}{\sqrt{10}}$

b. $\frac{-3}{\sqrt{10}}$
c. $\frac{3}{\sqrt{10}}$
d. $\frac{-2}{\sqrt{10}}$

33. In a triangle if A = 75° and B=60° then the ratio a:b:c is
    51. $\sqrt{6}:\sqrt{3}+1:2$
    52. $\sqrt{3}+1:\sqrt{6}:2$
    53. $2:\sqrt{3}+1:\sqrt{6}$
    54. $\sqrt{6}:2:\sqrt{3}+1$
34. The sum $1+\frac{3}{2}+\frac{5}{4}+\frac{7}{8}+\ldots\ldots$ to infinity is
    a. 6
    b. 7
    c. 8
    d. 9
35. Solve for x $\begin{vmatrix} x & 2 & 3 \\ -1 & 0 & 1 \\ 2 & -2 & 0 \end{vmatrix} = 0$
    a. -5
    b. 5
    c. 0
    d. 4
36. Simplify : $3\sqrt{-4}+5\sqrt{-9}-4\sqrt{-25}$
    a. $-i$
    b. 1
    c. i
    d. -1
37. Express $2+2\sqrt{3}i$ in polar form
    a. $4(cos30°+isin30°)$
    b. $4(cos60°+isin60°)$
    c. $4(cos90°+isin90°)$
    d. $4(cos120°+isin120°)$
38. The equation whose one root is $2+\sqrt{3}$ is
    a. $x^2+4x+1=0$
    b. $x^2+4x-1=0$
    c. $x^2-4x+1=0$
    d. $x^2-4x-1=0$
39. The acute angle between the lines $x-3y-6=0$ and $y=2x+5$ is
    a. 30°
    b. 60°
    c. 45°
    d. 135°
40. Length of perpendicular from (1,1) to line 4x+3y-12=0 is
    a. 2
    b. 1
    c. 3
    d. 4
41. The length of the intercept made by the straight line x+y=3 with the circle $x^2+y^2-2x-3=0$
    a. 2
    b. $2\sqrt{3}$
    c. $2\sqrt{2}$
    d. $2\sqrt{5}$
42. Evaluate $lim_{x\to 0}\frac{5x^2+3x}{x}$
    a. 0

b. 3
c. ∞
d. 5

43. Evaluate $lim_{x\to 0}\frac{tanx}{x}$
    a. 1
    b. 0
    c. -1
    d. ∞
44. If $x = t + \frac{1}{t}$ and $y = t - \frac{1}{t}$ find $\frac{dy}{dx}$
    a. $\frac{t^2-1}{t^2+1}$
    b. $\frac{t^2+1}{t^2-1}$
    c. $\frac{2t-1}{2t+1}$
    d. $\frac{2t+1}{2t-1}$
45. Find the derivative of $\frac{1-tanx}{secx}$
    a. sinx+cosx
    b. sinx-cosx
    c. cosx-sinx
    d.–sinx-cosx
46. Find the interval in which the function $f(x)=2x^3-15x^2+36x+1$ is increasing
    a. (-∞,2)∪(3,∞)
    b. (-∞,2)
    c. (3,∞)
    d. (-∞,2]∪[3,∞)
47. The maximum value of $f(x)=2x^3-3x^2-36$ is
    a. -81
    b. 81
    c. -44
    d. 44
48. Evaluate $\int \sqrt{1-sin2x}dx$
    a. sinx+cosx+c
    b. sinx-cosx+c
    c. cosx-sinx+c
    d. –sinx-cosx+c
49. Calculate the integral $\int logx\, dx$
    a. xlogx-x+c
    b. logx+c
    c. xlogx+x+c
    d. –logx+c
50. Evaluate $\int_0^{\sqrt{\frac{3}{2}}}\frac{dx}{\sqrt{(1-x^2)}}$
    a. $\frac{\pi}{2}$
    b. $\frac{\pi}{3}$
    c. $\frac{\pi}{4}$
    d. π

Chemistry

51. The alkene may be represented by a general formula
    a. C_nH_{2n+2} b.C_nH_{2n} c.C_nH_{2n-2} d.C_nH_{2n+1}
52. When Ethyl alcohol is heated with excess of concentrated sulphuric acid at about 160-170℃ it produces
    a. Ethane b. ethyl ether c. ethyne d. ethene

53. Aldehyde and ketone can be distinguished by
a. Fehling's solution c. NH_3
b. NaHSO_3 d. CL_3
54. Heavy water is
a. D_2O b. H_2O c. T_2O d. $H_2 \wedge CO$

55. In the chemical reaction P + KOH +H_2O → 2NaH_2PO_2 + PH_3
a. P is oxidized c. P is oxidized or reduced
b. P is reduced d. H_2 is oxidized
56. Copper Sulphate is (Cu$SO_4.5H_2O$ is also known as
a. Blue vitriol b. malachite c. Calomel d. Corrosive Sublimate
57. $Al_2O_3 isa$
a. Basic oxide b. acidic oxide c. neutral oxide d. amphoteric oxide
58. For which of the following molecule would the VSEPR theory predict a tetrahedral structure
a. B_2F_2 b. CH_4 c. BF_3 d. NH_3
59. Malachite is the ore of
a. Copper b. iron c. sodium d. magnesium
60. Permanent hardness of water can be removed by
a. Washing soda process
b. Permutit process
c. Calgon process
d. All of above
61. The chemical formula of oil of Vitriol is
a. H_2SO_4 b. HCl c. HNO_3 d. HCOOH
62. Electronic configuration of alkaline earth metal is
a. $ns^1 b. ns^2 c. (n-1)d^{10}ns^1 d. ns^2 nps$
63. Herber's process is used for manufacture of
a. H_2 b. Al c. NH_3 d. NaOH
64. The compound that give cannizzaro reaction is
a. CH_3COOH b. C_2H_5CHO c. HCHO d. CH_3OCH_3
65. If phenolphthalein is added to alkali, color change to
a. Purple b. orange c. pink d. red
66. Which order of bond angle is correct
a. H_2O < NH_3 < CO_2< CH_4
b. NH_3 >H_2O > CO_2 > CH_4
c. H_2O < NH_3 < CH_4< CO_2
d. CH_4< NH_3 < H_2O < C0$_2$
67. The amount of H_2SO_4 present in 500ml of 2N H_2SO_4 solution is
a. 89gm b. 49gm c. 33.35gm d. 24.5gm
68. The equivalent weight of KMnO_4 in acidic medium is
a. M/2 b. M/3 c. M/4 d. M/5
69. The PH of 0.001M NaOH is
a. 11 b. 8 c. 14 d. 3
70. The unit of rate constant for 2nd order reaction is
a. $molL^{-1}S^{-1} b. s^{-1} c. mol^{-1}LS^{-1} d. mol^{-2}L^2S^{-1}$
71. Isobars have same number of
a. Electrons b. protons c. neutrons d. nucleons
72. In covalency
a. The transference of electron takes place
b. Sharing of electrons takes place
c. The electrons are shared by only one atom
d. None of these takes place
73. A Lewis acid is
a. Proton acceptor c. electron pair donor
b. Proton donor d. electron pair acceptor

74. A spontaneous reaction is impossible when
a. Both $\Delta H \wedge \Delta sarenegative$
b. $both\Delta H \wedge \Delta sarepositive$
c. $\Delta Hisnegative \wedge \Delta sispositive$
d. $\Delta sisnegative \wedge \Delta Hispositive$
75. In an adiabatic process
a. Pressure is constant
b. The gas is expanded isothermally
c. There is perfect heat insulation
d. System exchange heat with surrounding

Physics

76. The dimensional formula of universal constant is
a. $L^2t^{-2}k^{-1}$ b. $M^{-2}L^3T^{-2}$ c. $M^{-1}L^3T^{-2}$ d. $MT^{-3}k^{-4}$
77. $1 / n^{th}$ part of a uniform chain of length L is hanging on a table, find the work done in pulling up the chain
a. mg$\frac{L}{2n^2}$ in vertical direction b. $\frac{2L}{n}$ in vertical direction
c. $\frac{2L}{n}$ in vertical direction d. $\frac{2n}{n}$ in vertical direction
78. A force of 20N is acting on a block of mass 5 kg at time 5 sec determine the velocity
a. 0.028 m/s^2 b. 0.28m/s^2 c. 0.0028m/s^2 d. 2.08m/s^2
79. If radius of earth is reduced
a. Tide duration reduced
b. earth rotates slower
c. time period of earth decreased
d. duration of day increases
80. Zener diode acts as
a. Voltage regulator in reverse biasing
b. voltage regulator is forward biasing
c. current regulator in forward biasing
d. current regulator in reverse biasing
81. If total energy of satellite is E. What is new escape velocity
a. 2E b. -2E c. E d. -E
82. What is $\frac{e}{m}$ ratio of electron?
a. 2.76× 10^{13} b. 2.7× 10^{10}
b. c. 1.76× 10^{10} d. 1.76× 10^{11}
83. At what temperature iron becomes paramagnetic?
a. 200°c b. 400°c c. 600°c d. 800°c
84. Sparking of diamond is because of
a. total internal reflection b. refraction
c. c. diffraction d. scattering
85. Pressure variation in mechanical wave depends upon as
a. α intensity b. independent of intent of intensity
c. α I d. none of these
86. When reflection of lights occurs then its
a. velocity constant b. wavelength constant
c. frequency constant d. all of the above
87. When a convergent beam of light is incident on a plane mirror, the image formed is
a. up right and real b. up right and virtual
c. inverted and real d. inverted and virtual
88. Which of the following cannot produce virtual image
a. plane mirror b. convex mirror
c. concave mirror d. all of these
89. In case of concave mirror, the minimum distance between a real object and its real image is:
a. f b. 2f c. uf d. zero

90. Which mirror is used for shaving?
    a. concave mirror b. convex mirror
    c. concave cylindrical mirror d. none of these
91. The angle of prism is 60°.What is the angle of incident for minimum deviation if the refraction index of the material of the prism is $\sqrt{2}$.
    a. 45° b. 60° c. 90° d. 30°
92. An air bubble in water behaves as a
    a. Concave lens b. Convex lens
    c. Concave mirror d. convex mirror
93. Near and far point of the healthy human eye are;
    a. 0 and 25cm b. 0 and ∞
    c. 25cm and 100cm d. 15cm and ∞
94. A person using a lens as a simple microscope sees on:
    a. inverted, virtual image b. inverted real and magnified
    c. upright, virtual image d. upright, real magnified image
95. A body is projected horizontally with velocity 190 m/s from height 400m.What is time to reach the grand?
    a. 5 sec b. 10 sec c. 15sec d. 20sec
96. Self-inductance of solenoid is proportional to
    a. 2 b. 3 c. 4 d. 5
97. A wire of certain material is stretched slowly by 10%.It's new resistance and specific resistance becomes respectively
    a. 1.2 times,1.1 times b. 1.21 times, same
    c. both remain the same d. 1.1 times,1.3 times
98. The wavelength of light emitted in the vehicle region by H_{+e} ions after collissions with H atoms is
    a. 2 b. 3 c. 4 d. 5
99. The ratio of kinetic energy of the n=2 electron from the H atom to that of H_{+e} ions is
    a. $\frac{1}{4}$ b. $\frac{1}{2}$ c. 1 d. 2

100. When a ceiling fan is switched on, it makes 10 rotations in the first 4 seconds. How many rotation v. make in the next 4 sec? (Assuming uniform angular acceleration)
    a. 10 b. 20 c. 30 d. 40

Answers

1.a 2.c 3.b 4.d 5.a 6.a 7.c 8.b 9.a 10.a 11.c 12.b 13.c 14.c 15.b 16.c 17.b 18.a 19.c 20.d 21.a 22.d 23.c 24.a 25.b 26.a 27.c 28.b 29.d 30.a 31.a 32.c 33.b 34.a 35.a 36.c 37.b 38.c 39.c 40.b 41.c 42.b 43.a 44.b 45.d 46.a 47.d 48.c 49.a 50.b 51.a 52.d 53.a 54.a 55.c 56.a 57.d 58.b 59.a 60.d 61.a 62.b 63.c 64.c 65.a 66.b 67.b 68.b 69.a 70.c 71.d 72.b 73.d 74.d 75.c 76.c 77.a 78.b 79.c 80.a 81.a 82.d 83.d 84.a 85.a 86.d 87.a 88.d 89.d 90.a 91.a 92.a 93.c 94.d 95.c 96.b 97.d 98.b 99.c 100.a