

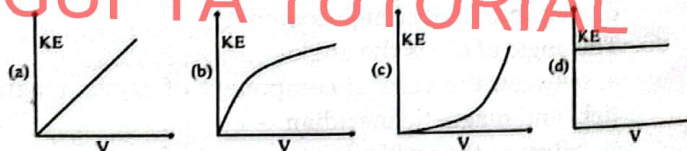
Tribhuvan University
Institute of Science and Technology
4 Years Bachelor in Computer Science and
Information Technology (BSc. CSIT)
Entrance Examination 2079

Full Marks: 100
Time: 2 hrs.

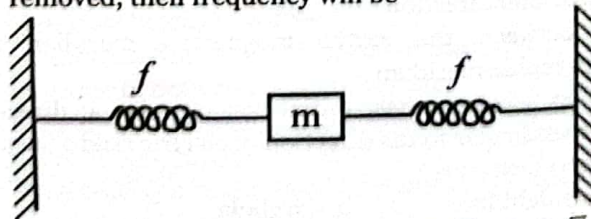
Attempt all questions:

Physics (25 × 1 = 25)

1. A quantity x is related by $x = \frac{\pi}{3}(a^2 - b^2)h$ where a , b and h are lengths, then quantity x is
a. length b. velocity c. area d. volume
2. A vector is multiplied by -2 then
a. direction reverses and unit changes
b. direction reverses and magnitude is doubled
c. direction remains unchanged but unit changes
d. neither direction reverses nor unit changes but magnitude is doubled.
3. A stone is dropped from a height of 45 m. The distance travelled by it during its last second is
a. 5 m b. 10 m c. 25 m d. 50 m
4. A projectile is broken into two pieces at the maximum height. Then its
a. momentum increases
b. momentum decreases
c. kinetic energy increases
d. kinetic energy decreases
5. Jet plane is based on the conservation of
a. mass b. energy
c. linear momentum d. angular momentum
6. Which of the following possesses highest viscosity?
a. water b. blood
c. glycerin d. honey
7. The graph of kinetic energy (KE) of a body versus velocity (v) is represented as

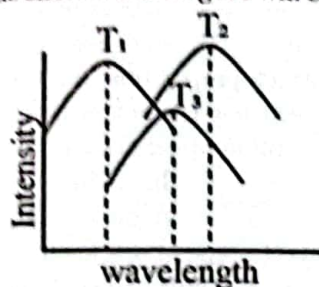


8. A mass m is attached with two identical spring as shown in the figure, has frequency f . If one of the spring is removed, then frequency will be

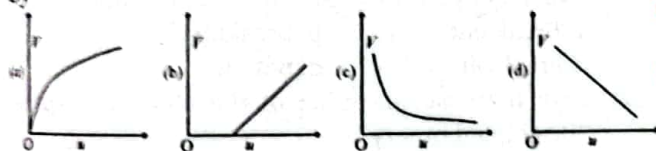


- a. f b. $2f$ c. $f\sqrt{2}$ d. $f\sqrt{2}$
9. A metal sheet has a circular hole in it. When it is heated, diameter of the hole
a. increases
b. decreases
c. remains unchanged
d. First increases and then decreases
10. The mean free path of a gas varies with pressure p as
a. p b. p^{-1} c. p^{-2} d. p^2

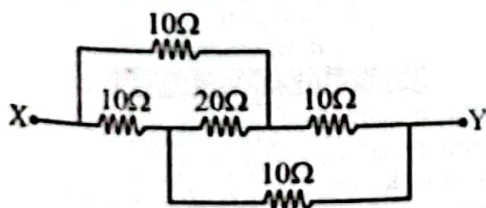
11. A body initially at 80°C cools to 64°C in 5 minutes and to 52°C in 10 minutes. The temperature of the body after 15 minutes will be
a. 35°C b. 30°C c. 25°C d. 20°C
12. Light of wavelength 550 nm falls normally on a slit of width $22 \times 10^{-7}\text{ m}$, the angular position of second minima from central maxima will be
a. 14.5° b. 42° c. 30° d. 62°
13. The variations of intensity with wavelength at different temperature as shown in the figure will be



- a. $T_1 > T_2 > T_3$ b. $T_1 > T_3 > T_2$
c. $T_2 > T_3 > T_1$ d. $T_3 > T_2 > T_1$
14. A completely transparent material will be invisible in vacuum when refractive index μ is
a. unity b. more than unity
c. less than unity d. infinity
15. For a convex mirror, the variation of u and v is given by



16. Sweetness of sound depends upon its
a. wavelength b. periodicity
c. periodicity and regularity
d. amplitude
17. A parallel plate capacitor is charged and the battery is then disconnected. If the plates of capacitors are removed further apart by means of insulating handles
a. The charge on capacitors increases
b. The voltage across the plate increases
c. The capacitance increases
d. The energy stored decreases
18. The equivalent resistance between the points x and y is



- a. $10\ \Omega$ b. $20\ \Omega$ c. $30\ \Omega$ d. $40\ \Omega$
19. A magnetic needle kept in a non-uniform magnetic field. It experiences
a. Torque but not a force
b. Neither a force nor a torque
c. Force and a torque
d. A force but not a torque
20. A source of 34 V and 50 Hz is connected in series with coil of 17 mH and resistor. If potential difference across resistor is 10 V . The potential difference across the coil is
a. 12 V b. 16 V c. 28 V d. 32 V

21. A strong argument for particle nature of cathode rays is that they
a. Produce fluorescence
b. Travel through vacuum
c. Get deflected by electric and magnetic
d. Cast shadow
22. When objects placed in a room are exposed to X-rays, they appear
a. Invisible b. Yellow c. Blue d. Red
23. Which series of Hydrogen atom lies in the infrared region?
a. Lyman b. Balmer c. Pfund d. H-alpha
24. When boron ^{10}B is bombarded by neutron, alpha particles are emitted. The resulting nucleus has the mass number
a. 11 b. 7 c. 6 d. 15
25. In P-type semiconductor, the majority and minority charge carriers are respectively
a. Protons and electrons
b. Electrons and protons
c. Electrons and holes
d. Holes and electrons

Chemistry (25 × 1 = 25)

26. The weight of sodium carbonate required to prepare 100 mL of its Decinormal solution is
a. 0.53 g b. 5.3 g c. 0.053 g d. 5.6 g
27. The concept of pH was introduced by
a. Arrhenius b. Lewis
c. Bronsted d. Sorensen
28. The rate of a chemical reaction increases with
a. increase in particle size of the reactants
b. increase in temperature
c. decrease in temperature
d. decrease in concentration of reactants
29. A spontaneous change is one in which the system has
a. an increase in internal energy
b. lowering of entropy
c. lowering of free energy
d. no energy change
30. Which of the following is an example of transition metal?
a. cobalt b. potassium
c. magnesium d. silicon
31. Which of the following compound is called blue vitriol?
a. Cu_2O b. $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ c. CuCl_2 d. Cu_2Cl_2
32. Silver is extracted from its sulphide ore by
a. contact process b. down's process
c. cyanide process d. Ostwald's
33. 2,4-Dichlorophenoxyacetic acid (2,4-D) is generally used as
a. a herbicide b. an insecticide
c. a fungicide d. none of the above
34. A class of organometallic compounds of magnesium with the general formula RMgX (where, R is an organic group and X is a halogen atom) is known as
a. Tolle's reagent b. Nessler's reagent
c. Schiff's reagent d. Grignard's reagent
35. Aldehydes can be distinguished from ketones by
a. Fehling's solution b. conc. H_2SO_4
c. Grignard's reagent d. Pyragallol
36. Picric acid is obtained by the nitration of

- a. aniline b. phenol
c. benzene d. benzoic acid
37. Which of the following compound is used as anaesthetic?
a. ethylene b. ethyl alcohol
c. chloroform d. acetylene
38. Aromatic carboxylic acid is
a. formic acid b. acetic acid
c. stearic acid d. cinnamic acid
39. Which of the following compound is called urea?
a. NH_2CONH_2 b. $\text{NH}_2\text{COONH}_4$
c. $\text{H}_2\text{NNHCONH}_2$ d. $\text{H}_2\text{NCOHC}_2\text{H}_5$
40. Ethyne reacts with alkaline KMnO_4 solution to give
a. glyoxal b. oxalic acid
c. ethanoic acid d. acetic acid
41. IUPAC name of acetaldehyde is
a. menthanal b. propogane
c. ethanal d. butanal
42. Which is the most toxic chemical forms of mercury?
a. Hg b. Hg_2^{2+} c. Hg^{2+} d. CH_3Hg^+
43. The number of molecules in 32 g of oxygen is
a. 6.02×10^{23} b. 6.02×10^9
c. 3.2×10^{23} d. 3.2×10^{16}
44. The outermost electronic configuration of chromium is
a. $3d^2 4s^2$ b. $3d^5 4s^1$
c. $3d^5 4s^2$ d. $3d^6 4s^2$
45. Which of the following has the lowest ionic radius?
a. O^{2-} b. F^- c. Al^{3+} d. Na^+
46. Which of the following hydrogen halides has the lowest dipole moment?
a. HF b. HCl c. HBr d. HI
47. The value of universal gas constant (R) is SI unit is
a. $8.314 \text{ joule K}^{-1} \text{mol}^{-1}$
b. $5.314 \text{ joule K}^{-1} \text{mol}^{-1}$
c. $3.501 \text{ joule K}^{-1} \text{mol}^{-1}$
d. $8.314 \times 10^7 \text{ ergs K}^{-1} \text{mol}^{-1}$
48. An example of acidic oxide is
a. HCl b. HBr c. HF d. HI
49. The ionic character is H-X bond is highest in
a. HCl b. HBr c. HF d. HI
50. Which of the following compounds is called magnesite?
a. $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ b. $\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$
c. MgCl_2 d. $\text{Mg}(\text{OH})_2$

English (15 × 1 = 15)

51. The word 'headland', gets its prime stress on:
a. 1st syllable b. 2nd syllable
c. 3rd syllable d. none
52. pick out the word or group of words which has nearly the same meaning as the word "headland",
a. highland b. flatland
c. promontory d. marshy land
53. ..pick out the word or group of words which has nearly the same meaning as the word "remarkable",
a. good b. astonishing
c. commendable d. notable
54. Pick out the word or group of words which has nearly the opposite meaning as the word "pompous",
a. showy b. wealthy
c. convincing d. humble
55. Pick out the word or group of words which has nearly the opposite meaning as the word "reciprocal",

- a. obstinate b. unilateral
c. mutual d. imaginary
56. Writing with correct spelling is:
a. orthography b. homograph
c. telegraph d. lithography
57. Choose the correct word order in the expression "we...cruelty,...tyranny and ... a flatterer."
a. hate, abhor, loathe b. abhor, hate, loathe
c. loathe, hate, abhor d. abhor, loathe, hate
58. Belief that god is nature :
a. Henotheism b. polytheism
c. pantheism d. deism
59. Choose correct preposition for the given expression "For a week she lived ... banana and milk as she believed ... the prescription of her doctor."
a. at, on b. on, in
c. in, on d. on, on
60. Choose correct prepositions for the given expression "I am scared... loss my business but keen Gambling."
a. in, of, on b. on, in, of
c. in, on, of d. of, in, on
61. Pick up the correct phrasal verb for the expression: "I was the son of sailors and Stories of the sea."
a. reared on b. reared off
c. brought on d. put on
62. Pick up the correct phrasal verb for the expression... "when does school.... For the summer vacation?"
a. Break out b. breakup
c. break off d. put on
63. Give the exact meaning of the idiomatic expression: "Bright and breezy"
a. in very sad mood
b. in very active mood
c. in a cheerful mood to do things quickly
d. in a decisive mood
64. Give the exact meaning of the idiomatic expression: "Go by the board"
a. plans discontinued and abandoned
b. plans in action
c. with a new plane
d. no plan for sometime
65. Use correct conditional expression in the expression: "You must go tomorrow ...you are ready or not."
a. if b. even if
c. unless d. whether

General IT (10 × 1 = 10)

66. MS-Word is an example of
a. An operating system
b. A processing device
c. Application software
d. An input device
67. A computer cannot "boot" if it does not have the
a. Compiler b. Loader
c. Operating system d. Assembler
68. By default, your documents print in mode.
a. Landscape b. Portrait
c. Page Setup d. Print View
69. Ctrl, Shift and Alt are called keys.
a. modifier b. function
c. alphanumeric d. adjustment
70. Storage which stores or retains data after power off is called

- a. Volatile storage b. Non-volatile storage
c. Sequential storage d. direct storage

71. What are the four things needed to connect to the internet?

- a. telephone line, modem, computer, and an ISP
b. modem, computer, PDA, and ISP.
c. telephone line, modem, computer, and PDA
d. computer, ISP, modem, and communication software

72. Which process refers to the starting up of a computer and the loading of there quired parts of the operating system into the RAM?

- a. Booting b. Tagging
c. Swiping d. Mapping

73. In the context of a word document, the term gutter stands for

- a. the blank page inserted in between two filled pages
b. the space left on the left side for rough work
c. the space between two paragraphs
d. the space left on one side for stitching and binding

74. Programs stored in ROM are called as

- a. Fireware b. Formware
c. Farmware d. Firmware

75. Select the correct statement from the following statements.

- A. MS-Excel creates workbooks, and each workbook may contain more work sheets.
B. A worksheet in MS-Excel 2000 package has a maximum of 256 columns and 65536 rows.
C. Columns are identified by a number and rows are identified by a letter.
D. Cells are identified by the column letter and the row number.

- a. A,B,C b. B,C,D
c. C,D,A d. A,B,D

Mathematics (25x × 1 = 25)

76. A sentence $x + 7 = 5$ is

- a. false statement b. true statement
c. not a statement d. a statement

77. If P and Q are the nonempty sets and $P \subset Q$ then

- a. $P \subset \bar{Q}$ b. $\bar{Q} \subset \bar{P}$
c. $P \cap Q = \phi$ d. $P \supset Q$

78. If $|x - 3| = 7$ then

- a. $\{10, -4\}$ b. $\{10, -4\}$
c. $\{-8, 4\}$ d. $\{10, -4\}$

79. $\sqrt{-1}$ is

- a. an integer number b. a prime number
c. an irrational number d. a complex number

80. The range of the function $f(x) = \sqrt{9 - x^2}$ is

- a. $(-3, 3]$ b. $[0, 3]$
c. $(0, 3)$ d. $\{0, 2\}$

81. The function $f(x) = \sin x + x$ is

- a. even function b. period function
c. odd function d. neither even nor odd

82. If x, y and z are in A.P. then

- a. $x + y = z$ b. $y + z = 2x$
c. $x - z = 2y$ d. $x + z = 2y$

83. The determination of the matrix $A = [-3]$ is

- a. 3 b. not possible c. -3 d. 0

84. If $x - iy = (5 + 2i)^2$ then (x, y) is

- a. (21, 20) b. (21, -20)
c. (-21, 20) d. (-21, -20)

85. If in a triangle ABC, the angle are in A.P. then angle B =

- a. 30° b. 45° c. 120° d. 60°

86. The area of triangle ABC is

- a. $2bc \sin A$ b. $bc \sin A$
c. $\frac{1}{2} bc \sin A$ d. $\frac{1}{2} ac \sin A$

87. Equation of a line perpendicular to the line $2x + 3y + 5 = 0$ is

- a. $3x + 2y + 7 = 0$ b. $2x - 3y + 7 = 0$
c. $-3x - 2y - 7 = 0$ d. $-2x - 3y + 7 = 0$

88. The two lines represented by $ax^2 + 4xy + 2y^2 = 0$ are perpendicular to each other for a =

- a. 0 b. -2 c. 2 d. 1

89. Equation of tangent (3,4) to the circle $x^2 + y^2 = 25$ is

- a. $3x - 4y = 25$ b. $3x + 4y = -25$
c. $4x + 3y = 25$ d. $3x + 4y = 25$

90. The unit vector $3i + 4j$ is

- a. $i + j$ b. $\frac{1}{5} (3i - 4j)$
c. $\frac{1}{5} (3i + 4j)$ d. $\frac{1}{5} (i + j)$

91. the scalar product of two vectors $3i - 4j + k$ & $3i + 4j$ is

- a. 6 b. -7 c. 0 d. -7i

92. probability of getting an even number while rolling a die is

- a. 0 b. 1/3 c. 1/4 d. 1/2

93. $\lim_{x \rightarrow 3} \frac{x^3 - 27}{x - 3}$

- a. 3 b. 9 c. 27 d. 0/0

94. The value of x for which $\frac{dy}{dx} = 0$, for $y = x^3 - 3x^2$ are

- a. 0, 0 b. 0, 2 c. 0, -2 d. 0, 3/2

95. If $y = e^{\log x^2}$ then $\frac{dy}{dx} =$

- a. 2x b. yx c. 2x/y d. $e^{\log x^2}$

96. The point of inflection of $y = x^3 - x^2$ is

- a. 3 b. 0 c. 1/3 d. 1

97. $\int_0^1 3x^2 e^{x^3} dx =$

- a. e-1 b. e c. 0 d. e^3

98. Area bounded by x- axis and the curve $y = x^2$ and the lines $x = 0$ and $x = 4$ is

- a. 64 b. 16 c. 16/3 d. 64/3

99. If $f(x) = x^2 + 5$, then the approximate value of $f'(2)$ with $x = 0.1$ is

- a. 6 b. 4.1 c. 9.2 d. 2

100. If two forces P and Q, $P > Q$, are acting at a point of a body, in the same direction, then the resultant force is

- a. $P - Q$ b. $P = Q$ c. PQ d. $Q - P$

GUPTA TUTORIAL

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B.Sc. CSIT: 2079

Physics

1. d	2. b	3. c	4. c	5. c	6. d	7. c	8. d	9. a	10. b
11. b	12. c	13. b	14. a	15. a	16. c	17. b	18. a	19. c	20. d
21. c	22. a	23. c	24. c	25. d					

Chemistry

26. a	27. d	28. b	29. c	30. a	31. b	32. c	33. a	34. d	35. a
36. b	37. c	38. c	39. a	40. a	41. c	42. d	43. a	44. b	45. b
46. d	47. a	48. c	49. c	50. d					

English

51. a	52. c	53. b	54. a	55. c	56. a	57. d	58. c	59. b	60. d
61. c	62. b	63. c	64. a	65. d					

Computer Related GK

66. c	67. c	68. b	69. a	70. b	71. a	72. a	73. d	74. d	75. c
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Mathematics

76. b	77. b	78. a	79. d	80. b	81. c	82. d	83. c	84. a	85. d
86. c	87. a	88. b	89. d	90. c	91. b	92. b	93. c	94. d	95. a
96. a	97. b	98. d	99. c	100. b					