MODEL TEST PAPER

MAXIMUM MARKS: 100
TIME: 100 MINUTES

Pre-Engineering
Course Area & Marks

S.#	SUBJECTS TO BE TESTED	COURSE/AREA FOR TEST	MARKS	TYPE OF QUESTIONS
1	Mathematics	Total MCQS: 30 From class 9th: 10 From class 10th: 20	30	MCQs
2.	Physics	Total MCQS: 30 From class 9th: 10 From class 10th: 20	30	MCQs
3.	Chemistry	Total MCQS: 30 From class 9th: 10 From class 10th: 20	30	MCQs
4.	English	Total MCQS: 10 (Grammar 9th & 10th level)	10	MCQs

NOTE: The weightage of MCQs may vary slightly in the Test. This is a sample test, The actual MCQs may be SLO based and may correspond to higher cognitive levels.

S. No	Pre-Engineering
1.	When $x = -3$ then $(3x)^2 - x^2 =$_____. a. 69 b. -69 c. -72 d. 72
2.	Nature of image is formed by convex mirror is a. Real, inverted and diminished b. Real, inverted and enlarged c. virtual, erect and enlarged d. Virtual, erect and diminished
3.	The ionic state of matter is called _____. a. Plasma b. Solid c. Liquid d. Gas
4.	He writes faster than any other writer. The word faster is.............. a. Adverb b. Adjective c. Adj phrase d. Adverbial phrase
5.	To prepare 250 cm³ solution of 2M. The amount of NaOH is .... a. 10 grams b. 20 grams c. 40 grams d. 80 grams
6.	Number of input terminals in NOT gate is _____. a. 1 b. 2 c. 3 d. 4
7.	The most stable artificial radioactive isotope of carbon is C-11, which has a half-life of a. 20.3 days b. 22.3 seconds c. 22.3 minutes d. 20.3 minutes
8.	The angle of incidence for a light ray having zero reflection angle is_____. a. 0° b. 45° c. 90° d. 180°
9.	A capacitor C has a charge Q. The actual charges on its plates are_____. a. Q , Q b. 0, Q c. +Q , -Q d. Q/2, -Q/2
10.	The region of high density and pressure relative to the equilibrium density or pressure of the medium is termed as _____. a. Crest b. Trough c. Compression d. Rarefaction
11.	Two combined resistance of two identical resistors, connected in series is 16 Ω. Their combined resistance in a parallel arrangement will be _____. a. 2 Ω b. 4 Ω c. 6 Ω d. 8 Ω
12.	The distance covered by a body in time t starting from rest is _____. a. $\frac{1}{2} \times at^2$ b. vt c. v/t d. a/t^2
13.	The system of common logarithm was invented by _____. a. Caley's b. Pythagoras c. Leena d. Briggs
14.	When a straight current carrying conductor is placed in a magnetic field at right angle to it, the direction of magnetic force acting on conductor is_____. a) Opposite to the direction of the field b) Same as the direction of field c) Makes an angle of 45° with the current d) At right angle to both the field and current

15.	Which one of the following is an example of primary storage? a. Random Access Memory b. USB c. Hard Disk d. Floppy Disk
16.	The change in the focal length of the eye is called____ a. Modification b. distinct vision c. accommodation d. induction
17.	In damping the amplitude of the vibrating body decreases due to _____. a. Restoring force b. Resistive force c. Weight of the body d. Normal Force
18.	A positive and negative charges are initially 4 cm apart. When they are moved closer together so that they are now 1 cm apart, the force between them is _____. a. 4 times smaller than before b. 4 times larger than before c. 16 times smaller than before d. 16 times greater than before
19.	As compare to thick wires, thin wires have _____. a. More resistance b. Least resistance c. Same resistance d. No resistance
20.	Which of the following decolorize bromine water? a. C_3H_6 b. C_2H_6O c. CH_4 d. C_4H_{10}
21.	In Newton's third law of motion the action and reaction pair does not neutralize each other because they _____. a. Act on same body b. Act on different bodies c. Act on third body d. Produces friction
22.	How many grams are there in two moles of oxygen gas? a. 16 grams b. 32 grams c. 44 grams d. 64 grams
23.	$\lvert x \rvert =$_____, if $x > 0$. a. x b. 0 c. $-x$ d. -1
24.	Which part of a D.C motor reverses the direction of current through the coil every half cycle? a. The armature b. The commutator c. The brushes d. The slip rings
25.	The Euler constant "e" is _____. a. rational b. irrational c. polynomial d. expression
26.	The refractive index of a crown glass is _____. a. 1.333 b. 1.46 c. 1.52 d. 2.417
27.	What will be the value of γ for a solid for which α has a value of $2 \times 10^{-3} k^{-1}$? a. $2 \times 10^{-3} k^{-1}$ b. $2 \times 10^{-6} k^{-1}$ c. $6 \times 10^{-6} k^{-1}$ d. $6 \times 10^{-3} k^{-1}$
28.	In oligosaccharides, monosaccharides are connected by……………………… a. Glucose bond/linkage b. Saccharide bond / linkage c. Covalent bond/linkage d. Glycosidic bond/linkage
29.	Which prefix has the smallest value? a. nano b. pico c. femto d. atto
30.	Two charged spheres are separated by 1 mm. Which of the following pair of charges would produce the greatest attractive force? a. +1q and +4q b. +2q and -4q c. +2q and -2q d. -2q and -2q
31.	When we heat the metal at high temperature they emit _____. a. Protons b. Electrons c. Neutrons d. Neutrino
32.	For turn ratio of transformer to be 5 the relation will be _____. a. $N_P = 5 N_s$ b. $N_S = \frac{Np}{5}$ c. $N_S = 5 N_P$ d. $N_S = \frac{5}{Np}$
33.	If the mass of bob of the pendulum is increased by the factor of 2, then the time period of pendulum motion will _____. a. Increase by factor of $\sqrt{2}$ b. Increase by a factor of 2 c. Increase by a factor of 4 d. Remains Same
34.	Work done by the gravitational force of earth on a satellite along a circular path is ___. a. 0 b. >0 c. <0 d. ≥0
35.	Dehydration of alcohol produces ……………… a. Alkene and carbon dioxide b. Alkene and water c. Only alkene d. Only alkyne
36.	The correct formula for propyne is a. C_3H_8 b. C_3H_5 c. C_3H_6 d. C_3H_4
37.	Bleeding from the damaged blood vessels, either outside of the body or inside of body is caused by deficiency of vitamin……………………… a. A b. B (complex) c. C d. K

38.	While going upward in air, air pressure .... a. Increases b. Decreases c. Remains constant d. First increases then decreases
39.	The simplified form of 6a:18b is _____. a. a:3b b. 3a: b c. 3a:9b d. 9a:3b
40.	Steel is an example of .... a. Electroplating b. Element c. compound d. Mixture
41.	All gases have same number of ....in there one mole. a. Atoms b. Ions c. Molecules d. Electrons
42.	An element has atomic number 18. Its belongs to ....block a. s b. p c. d d. f
43.	Neon has same electronic configuration with all these except a. O^{-2} b. Na^{+1} c. Mg^{+2} d. Ca^{+2}
44.	The only non-conductor element in liquid form is............................... a. Hg b. Au c. Br d. S
45.	In reaction MnO_2 + 4HCl ----------------> $MnCl_2$ + Cl_2 + $2H_2O$ which one is reduced? a. Mn b. Cl c. H d. O
46.	Which one is not an example of amorphous solid a. wood b. Glass c. plastic d. metal
47.	..............................is an ionic compound. a. CO_2 b. H_2O c. CH_4 d. CaO
48.	If $z_1 = 2 - i$ and $z_2 = 3 + i$ then $z_1 z_2 =$_____. a. $-7 - i$ b. $-7 + i$ c. $7 + i$ d. $7 - i$
49.	Petroleum is refined by fractional distillation instead of simple distillation because .... a. Petroleum is organic compounds b. Petroleum has very high boiling point c. Simple distillation is used only for inorganic compound d. The petroleum compounds have very close boiling points
50.	Which pollutant has no natural sources? a. NO_X b. SO_X c. Particulate matter d. CFCs
51.	During equilibrium which condition may not possible a. More products less reactants b. More reactants less products c. Amount of products will always be equal to amount of reactants at equilibrium state d. Formation of reactants and products is always same at equilibrium state
52.	Which of the following is a strong acid a. HCl (pH= 3) b. Lemon juice (pH=2.2) c. Acetic acid (pH=5) d. Grapes (pH=4.5)
53.	Catenation is the link of .... a. Carbon to carbon atoms b. Oxygen to carbon atoms c. Nitrogen to carbon atoms d. Hydrogen to carbon atoms
54.	It is our problem, not-----. a. There b. Their c. There's d. Theirs
55.	If Marwan------ earlier, he would always be on time. a. Had get up b. Had got up c. Gets up d. Got up
56.	If $x = \sqrt{3} - \sqrt{2}$, then $x^2 + \frac{1}{x^2} =$_____. a. -10 b. 10 c. 20 d. -20
57.	At a distance of three Earth's radius above the Earth's surface the value of "g" becomes _____ of its value on earth's surface. a. 4 times **b.** ¼ times c. 16 times d. 1/16 times
58.	If velocity of a body is reduced to half, then its kinetic energy will _____. a. Reduce by factor of ¼ b. Reduce by factor of ½ c. Reduce by factor of 2 d. Reduce by factor of 4
59.	The sum of interior angles of a quadrilateral is _____. a. 90° b. 180° c. 360° d. 460°
60.	The SI unit of Young's Modulus is same as that of _____. a. Elasticity b. Density c. Stress d. Strain

61.	Two balls of masses 100 g and 50 g respectively are dropped freely from same height. Which of these balls will reach the ground first? a. Both at same rate b. 100g ball c. 50g ball d. Both will escape the gravity
62.	$a^3 - b^3, a^2 - b^2, a^2 + ab + b^2$ and x are in proportion . Then x= _____. a. $-a - b$ b. $a - b$ c. $a + b$ d. $\pm(a - b)$
63.	The set $\{x/x \in U \text{ and } x \notin A\}$ is _____. a. U' b. U c. A d. A'
64.	Intensity level of sound is equal to _____. a. $K \log \frac{I}{Io}$ b. $K \log \frac{Io}{I}$ c. $2K \log \frac{I}{Io}$ d. $K \log \frac{2I}{Io}$
65.	In expression $\sqrt[n]{a^m}$ if m = n then $\sqrt[n]{a^m} =$ _____ a. $\frac{1}{a}$ b. 1 c. a d. -1
66.	The lines $x - y = 5$ and $2x + y = 1$, are _____. a. intersecting b. parallel c. inclined d. both a and b
67.	A trapezoid is a quadrilateral with exactly _____ pair of parallel sides. a. 3 b. 2 c. 1 d. no sides parallel
68.	When the magnitude of K_c is very small it shows that a. Reaction mixture contains most of the reactants b. Reaction mixture contains most of the products c. Reaction mixture contains almost equal reactants and products d. Reaction is completed
69.	In parallelogram the consecutive angles are _____. a. Complementary b. supplementary c. Acute d. alternate
70.	3, 4, 5 are the sides of a _____ triangle. a. Acute b. obtuse c. right d. scalene
71.	A and B are two matrices then $A_{m \times p} \times B_{p \times n} =$ _____. a. $AB_{n \times m}$ b. $AB_{m \times n}$ c. $AB_{p \times p}$ d. $AB_{p \times n}$
72.	A scalar matrix of order n in which each diagonal element is unity is called _____ matrix. a.Identity b. rectangular c. row d. column
73.	Which of the following does not act as a lewis acid? a. AlCl3 b. BF3 c. CCl4 d. Mg^{+2}
74.	Which of the following is not an organic compound? a. Urea b. Ammonia c. Hexane D. Mathanol
75.	Water volume is minimum at ....degree centigrade a. 4 b. 0 c. -4 d. Below zero
76.	Hardness of water is a ....change a. Chemical b. Physical c. Biochemical d. Biological
77.	Which one will undergo substitution reaction a. C_2H_4 b. C_3H_4 c. C_4H_6 d. C_2H_6
78.	$\{a \in A/(a, b) \in R\} =$ _____. a. Dom A b. Range A c. Dom R d. Range R
79.	If 2x=6 and $x + y$=2 then the ordered pair formed is _____. a. (3,1) b.(3, -1) c. (-3, 1) d. (-3, -1)
80.	A _____ is a segment whose end points are on the circle. a. Radius b. chord c. diameters d. arc
81.	The sum of the complex cube roots of unity is _____. a. 0 b. 1 c. -1 d. ω
82.	The market is nearer to them than--------. a. We b. Ourselves c. Ourself d. Us
83.	The harmonic mean of 5,6,8,9 and 10 is _____. a. 8.568 b. 3.69 c. 7.19 d. 7.892
84.	Stanzaic structure of the poem "Dreams" is ------------. a. Quatrain b. Quintain c. Sextain d. Dizain
85.	Which of the following is a heterocyclic compounds a. Benzene b. Cyclohexane c. Cyclopentane d. Thiophene

86.	Which of the following is reddish brown gas?
	a. CO_2 b. NO_2 c. O_2 d. O_3
87.	Matte is the mixture of ....
	a. Cu_2S and FeS b. Cu_2O and FeS c. CuS and FeS d. Cu_2S and Fe_2S
88.	The word rational comes from the word _____.
	a. proportion b. variation c. ratio d. irrational
89.	If 1 and -2 are the roots of $x^3 - mx^2 + nx + 12$, then the values of "m" and "n" are _____.
	a. 5,8 b. 5, -8 c. -5, -8 d. -5, 8
90.	If $x^3 + 1^3 = 0$, then the cube roots are _____.
	a. $1, \omega, \omega^2$ b. $-1, \omega, \omega^2$ c. $1, \omega, -\omega^2$ d. $-1, -\omega, -\omega^2$
91.	The new information about the dengue virus caused panic in government and public------.
	a. Like b. Likely c. Dislike d. Alike
92.	Let the door be .... quickly.
	a. Open b. Opening c. Opened d. Close
93.	He is known for his intelligence. The word intelligence is ....noun?
	a. Countable b. Proper c. Abstract d. Concrete
94.	A/An _____ is the union of two non-collinear rays with the same end points.
	a. Rays b. line c. diameter d. angle
95.	An equation in which the variable appears in one or more radicands is called _____ equation.
	a. Radical b. exponential c. quadratic d. linear
96.	In quadratic standard form, the term "bx" is _____.
	a. Real b. imaginary c. quadratic d. linear
97.	What does the idiom "break the ice" mean?
	a. To make the first move b. To cause trouble
	c. To break a physical object d. To hurry up
98.	Maryam and Manahil went shopping, but-------couldn't find anythin---------liked.
	a. They, them b. They, those c. Them, they d. They, they
99.	The solutions for $4y + \frac{4}{y} = 10$ when $y = 2^x$ are _____.
	a. {1} b. {-1,1} c. {0} d. {-1}
100.	The sexagesimal form of $38.39°$ is _____.
	a. $38° \ 24'' \ 15'$ b. $38° \ 23' \ 24''$ c. $38° \ 24' \ 0''$ d. $38° \ 23' \ 15''$