Sr No.	MTECH NanoScience and Technology
1	In the series 357,363,369,……. What will be the 10th term?
Alt1	405
Alt2	411
Alt3	413
Alt4	417

2	Choose word from the given options which bears the same relationship to the third word, as the first two bears: Moon: Satellite :: Earth : ?
Alt1	Sun
Alt2	Planet
Alt3	Solar System
Alt4	Asteroid

3	Door is related to Bang in the same way as Chain is related to ……..?.....
Alt1	Thunder
Alt2	Clinch
Alt3	Tinkle
Alt4	Clank

4	Select the lettered pair that has the same relationship as the original pair of words: Emollient: Soothe
Alt1	Dynamo: Generate
Alt2	Elevation: Level
Alt3	Hurricane: Track
Alt4	Precipitation: Fall

5	Which of the following is the same as Count, List, Weight?
Alt1	Compare
Alt2	Sequence
Alt3	Number
Alt4	Measure

6	Spot the defective segment from the following:
Alt1	The downtrodden
Alt2	needs
Alt3	to be uplifted
Alt4	on a war footing

7	Choose the meaning of the idiom/phrase from among the options given: A close shave
Alt1	a nice glance
Alt2	a narrow escape
Alt3	an intimate
Alt4	a triviality

8	Lightning ------- in the same place twice.
Alt1	doesn't hit
Alt2	never strikes
Alt3	never attacks
Alt4	never falls

9	Choose the option closest in meaning to the given word: FLIPPANT
Alt1	serious
Alt2	unsteady
Alt3	irreverent
Alt4	caustic

10	Choose the antonymous option you consider the best: OBSOLETE
Alt1	obscure
Alt2	hackneyed
Alt3	current
Alt4	grasp

11	Akash scored 73 marks in subject A. He scored 56% marks in subject B and X marks in subject C. Maximum marks in each subject were 150. The overall percentage marks obtained by Akash in sall te three subjects were 54%. How many marks did he score in subject C ?
Alt1	84
Alt2	86
Alt3	79
Alt4	73

12	A person starts from his house and travels 6 Km towards the West, he then travelled 4 Km towards his left and then travels 8 Km towards west and 3 Km towards South. Finally he turns right and travels 5 Km. What is the horizontal distance he has travelled from his house ?
Alt1	7 Km
Alt2	15 Km
Alt3	23 Km
Alt4	19 Km

13	If 1st Jan 2012 is a Tuesday then on which day of the week will 1st Jan 2013 fall ?
Alt1	Wednesday
Alt2	Thursday
Alt3	Friday
Alt4	Saturday

14	One morning after sunrise, Reeta and Kavita were talking to each other face to face at University. If Kavita' shadow was exactly to the right of Reeta, which direction was Kavita facing ?
Alt1	North
Alt2	South
Alt3	East

Alt4	West

15	In an exam every candidate took History (or)Geography(or)both. 74.8%took History and 50.2% took Geography. If the Total number of candidates is 1500,how many took History and Geography both?
Alt1	400
Alt2	350
Alt3	750
Alt4	375

16	Which word includes the larger % of Vowels?
Alt1	GOOGLE
Alt2	AMAZON
Alt3	FACE BOOK
Alt4	DOE

17	A= Least prime >24; B=Greatest prime <28; Then
Alt1	A>B
Alt2	A<B
Alt3	A=B
Alt4	None

18	CL X VIII refers
Alt1	861
Alt2	701
Alt3	168
Alt4	107

19	Which of the following is larger than 3/5 ?
Alt1	1/2
Alt2	39/50
Alt3	7/25
Alt4	59/100

20	Mr. Babu travelled 1200 km by air which formed 2/5 of his trip. One third of the whole trip, he travelled by car and the rest of the journey was by train. What was the distance travelled by train?
Alt1	600km
Alt2	700 km
Alt3	800 km
Alt4	900 km

21	During electrolysis:-
Alt1	Anion get reduced
Alt2	Cation get oxidized
Alt3	Anion get oxidized
Alt4	Both anion and cations get reduced

22	The key intermediates in the synthesis of phospholipids is:-
Alt1	DCP diacyl glycerol
Alt2	CDP diacyl glycerol
Alt3	CP diacyl glycerol
Alt4	Minimum number of times a fair coin must be tossed so that the probability of getting at least one head is atleast 0.95 is:-

23	Minimum number of times a fair coin must be tossed so that the probability of getting at least one head is atleast 0.95 is:-
Alt1	7
Alt2	6
Alt3	4
Alt4	5

24	Requirement for cross-slip movement of dislocation:-
Alt1	No preferred slip plane
Alt2	Preferred slip plane
Alt3	No preferred slip direction
Alt4	Preferred slip direction

25	Matix of cell wall is made of:-
Alt1	Hemicellulose
Alt2	Glycoprotein
Alt3	Cellulose
Alt4	Pectin

26	If the plane polarised light, whose plane of vibration inclined at an angle of 45° to the optic axis, is incident on a quarter wave plate, the emergent light is:-
Alt1	Plane polarised light
Alt2	Circularly polarised light
Alt3	Elliptically polarised light
Alt4	None of these

27	The value of α for which the quadratic equation $x2 - (\sin\alpha-2)\, x - (1 + \sin\alpha) = 0$has roots whose sum of squares is least, is:-
Alt1	$\pi/3$
Alt2	$\pi/6$
Alt3	$\pi/2$
Alt4	$\pi/4$

28	Frictional energy is dissipated by:-
Alt1	wear
Alt2	wear and heat
Alt3	wear and sound
Alt4	wear, heat and sound

29	Which of the following is a malachite ore?

Alt1	CuCO3.Cu(OH)2
Alt2	Cu2CO3
Alt3	CuCO3
Alt4	Cu2O

30	Let a , b , c be distinct non-zero real numbers such that a2 ,b2 , c2 are in harmonic progression and a, b, c are in arithmetic progression, then:-
Alt1	2b2 - ac = 0
Alt2	4b2 - ac = 0
Alt3	2b2 + ac = 0
Alt4	4b2 + ac = 0

31	Which of the following not allotrope of carbon?
Alt1	C60
Alt2	Graphite
Alt3	C22-
Alt4	Diamond

32	The stress to strain ratio is known as:-
Alt1	Hall-Petch relation
Alt2	Toughness
Alt3	Eley-Rideal relation
Alt4	Young's modulus

33	The scattering amplitude can be obtained by substituting the unperturbed wave function in the integral, such an approximation is called:-
Alt1	Born approximation
Alt2	WKB approximation
Alt3	Bohr approximation
Alt4	None of these

34	The correct option is " Born approximation "
Alt1	Planck's T3 law
Alt2	Einstein's law
Alt3	Stefan's T3 law
Alt4	Debye's T3 law

35	The experimental technique most suitable for determination of 3D structure of crystalline solid:-
Alt1	XRD
Alt2	Polarimetry
Alt3	FT-IR
Alt4	UV-Vis spectroscopy

36	A flux of 100 lumen falls normally on a steady table 0.5 m 1 m. The illumination on the table is:-
Alt1	50 lux
Alt2	25 lux
Alt3	200 lux

Alt4	100 lux

37	Among the following which element does not exhibit allotropy?
Alt1	chlorine
Alt2	hydrogen
Alt3	tin
Alt4	carbon

38	The wave whose amplitude is the same at any point in perpendicular to specified direction is called:-
Alt1	Wave equation
Alt2	Rectangular wave
Alt3	Plane wave
Alt4	None of these

39	rRNA present in 40 S subunit of ribosome is:-
Alt1	5 S
Alt2	5.8 S
Alt3	18 S
Alt4	16 S

40	$\lim_{x\to 0}\frac{\sin(\pi(1-\sin^2 x))}{\tan^2 x}$ is equal to:-
Alt1	-π
Alt2	π/ 2
Alt3	1
Alt4	π

41	Let | z1 | = 30 and | z2 + 5 + 12i | = 13, then minimumvalue of | z2- z2 | is:-
Alt1	2
Alt2	6
Alt3	4
Alt4	None of these

42	The resistance of photo resistive cell _____.
Alt1	Remains constant irrespective of the light intensity incident upon it
Alt2	Increases with increase in light intensity
Alt3	Decreases with increase in light intensity in an exponential manner
Alt4	Decreases with increase in light intensity in a linear manner

43	Hydrophilic chemical of cell wall is:-
Alt1	Suberin

Alt2	Fat
Alt3	Lignin
Alt4	Pectin

44	Coefficient of x5 in the expansion of the product(1 + 2x)6 (1 - x)7 is:-
Alt1	170
Alt2	171
Alt3	160
Alt4	172

45	Identify the wrong statement in the following:-
Alt1	Atomic radius of the elements decreases as one moves across from left to right in the 2nd period of the periodic table
Alt2	Amongst isoelectronic species, greater the negative charge on the anion, larger is the ionic radius
Alt3	Atomic radius of the elements increases as one moves down the first group of the periodic table
Alt4	Amongst isoelectronic species, smaller the positive charge on the cation, smaller is the ionic radius

46	The time period of oscillation of a bar magnet suspended horizontally along the magnetic meridian is T0. If this magnet is replaced by another magnet of the same size and pole strength, but double the mass, the new time period will be:-
Alt1	T0/√2
Alt2	√2 T0
Alt3	2 T0
Alt4	T0/2

47	The eigen value of a hermitian matrix are a)imaginary b) real c) variable d) constant. The wave function corresponding to two different Eigen values are:-
Alt1	Orthogonal
Alt2	Monoclinic
Alt3	Triclinic
Alt4	None of these

48	In general bonding energy values are higher for _____ bonds.
Alt1	ionic
Alt2	hydrogen
Alt3	covalent
Alt4	metallic

49	Which of the following ions bind strongly to valinomycin?
Alt1	K+
Alt2	Al3+
Alt3	Na+
Alt4	Ca2+

50	What is active form of mannose in the synthesis of mannose-containing carbohydrate chains in glycoproteins?
Alt1	Uridinediphosphate mannose

Alt2	Adenosine diphosphate mannose
Alt3	Guanosinediphosphate mannose
Alt4	Cytidinediphosphate mannose

51	Sedimentation unit of ribosome is:-
Alt1	Svedberg (S)
Alt2	mili-micron (m)
Alt3	micronm( )
Alt4	Angstrom (Å)

52	Ballistic tests are used in magnetic measurements for _____.
Alt1	Determination of B-H curve of the specimen only
Alt2	Determination of hysteresis loop of the specimen only
Alt3	Determination of flux density, magnetizing force and B-H curve and hysteresis loop of the specimen
Alt4	Finding out iron losses in the specimen

53	The covalent bond having highest bond dissociation energy is:-
Alt1	C = C
Alt2	C≡O
Alt3	C = Si
Alt4	O =O

54	Which one of the following oxides crystallizes into fluorite structure?
Alt1	$MgAl_2O_4$
Alt2	$BaTiO_3$
Alt3	Al_2O_3
Alt4	UO_2

55	Vulcanization refers to:-
Alt1	extrusion
Alt2	strengthening of rubber
Alt3	injection moulding
Alt4	addition polymerization

56	Middle lamella contains:-
Alt1	Lignin
Alt2	Pectate
Alt3	Cutin
Alt4	Cellulose

57	Aging is characterized by:-
Alt1	Increased catabolism
Alt2	Increased anabolism
Alt3	Decline in metabolic activity
Alt4	Increased metabolic activity

58	According to VSEPR theory, the molecules/ion having ideal tetrahedral shape is:-

Alt1	S2Cl2
Alt2	SO42-
Alt3	SF4
Alt4	SO2Cl2

59	The EPR spectrum of phenyl radical (C6H5*) shows:-
Alt1	24 lines
Alt2	36 lines
Alt3	6 lines
Alt4	18 lines

60	An assembly of fermions is known as:-
Alt1	Fermi-Dirac gas
Alt2	Bose-Einstein gas
Alt3	Maxwell Dirac gas
Alt4	None of these

61	The existence of unique solution for the system ofequations,x + y + z = p, 5x - y + qz= 10 and2x + 3y - z = 6 depends on:-
Alt1	neither'p' nor 'q'
Alt2	p' only.
Alt3	q' only.
Alt4	p' and 'q' both

62	The number of linearly independent Eigen function is called:-
Alt1	System of Degeneracy
Alt2	Degree of Degeneracy
Alt3	Degeneracy
Alt4	None of these

63	Healing of cuts and wounds is:-
Alt1	Repair
Alt2	Dedifferentiation
Alt3	Growth
Alt4	Regeneration

64	Monochromatic green light of wavelength 5X10-7m illuminates a pair of narrow slits 1.0mm apart. The separator of bright lines on the interference pattern formed on a screen 2m away is:-
Alt1	1.00mm
Alt2	0.10mm
Alt3	0.25mm
Alt4	0.40mm

65	According to vanderwaal's equation of state, the critical volume is:-
Alt1	4b
Alt2	3b
Alt3	2b

Alt4	b

66	The reversible Sol-gel transformation is called:-
Alt1	Electrophoresis
Alt2	Thioxotropy
Alt3	De-emulsification
Alt4	None of these

67	With tempering temperature, the product becomes:-
Alt1	tougher
Alt2	softer
Alt3	stronger
Alt4	harder

68	All of the following are true about lasers except:-
Alt1	The light is emitted only in pulses
Alt2	The light doesn't diverge significantly
Alt3	Light is essentially all the same wavelength
Alt4	Light waves are in phase

69	In molecular H2O, NH3 and CH4:-
Alt1	The hybridization are same
Alt2	The bond angles are same
Alt3	The bond distances are same
Alt4	The shapes are same

70	1If a curve passes through (1, 1) and tangent at any point 'P' on it cuts the axes at 'A' and 'B' , where point 'P' bisects the segment AB , then curve is given by:-
Alt1	x2 + y2 = 2
Alt2	xy2 = 1
Alt3	xy = 1
Alt4	x2y = 1

71	For differential equation $\left(\frac{dy}{dx}\right)^2 - x\left(\frac{dy}{dx}\right) + y = 0$, the solution can be given by:-
Alt1	y = 2x2 - 4
Alt2	y = 2 + x
Alt3	y = 2x - 4
Alt4	y = 2x

72	For a spontaneous reaction, e.m.f of the cell is:-
Alt1	Zero

Alt2	Negative
Alt3	Fixed
Alt4	Positive

73	A steam engine converts heat energy into _____.
Alt1	Magnetic energy
Alt2	Electrical energy
Alt3	Chemical energy
Alt4	Mechanical energy

74	Among the following C-O bond order is linear in:-
Alt1	[Mn (CO)6]+
Alt2	Fe(CO)5
Alt3	[V(CO)6]-
Alt4	Cr(CO)6

75	Extra uridine rich small sized RNA is:-
Alt1	sn RNA
Alt2	sc RNA
Alt3	5.8 S RNA
Alt4	5 S RNA

76	The most common type of reproduction in bacteria is:-
Alt1	Budding
Alt2	Binary fission
Alt3	Binary fusion
Alt4	Sexual reproduction

77	Regulated unit of genetic material is termed:-
Alt1	Regulator gene
Alt2	Okazaki segment
Alt3	Operator gene
Alt4	Operon

78	Ferrites are:-
Alt1	paramagnetic
Alt2	ferrimagnetic
Alt3	ferromagnetic
Alt4	piezoresistive

79	Which among the following is not the non-destructive method of testing materials?
Alt1	magnetic particle inspection
Alt2	radiography
Alt3	X-ray diffraction
Alt4	dye penetrant test

80	Transformer cores are made from:-

Alt1	Cu-Si alloy
Alt2	Fe-Si alloy
Alt3	Cu-Co alloy
Alt4	Fe-Cu alloy

81	Albinism is:-
Alt1	Genetic disorder
Alt2	Environment related disorder
Alt3	Infectious disease
Alt4	Deficiency disease

82	Select the false statement about catalyst:-
Alt1	Catalyst increases the reaction rate
Alt2	Catalyst gets regenerated after the process
Alt3	Catalyst alters the thermodynamic path
Alt4	Catalyst reduces the activation energy

83	Kreb's cycle takes place in:-
Alt1	Chloroplast
Alt2	Mitochondria
Alt3	Ribosome
Alt4	Endoplasmic reticulum

84	Melting point of ice _____.
Alt1	Is proportional to cube of pressure
Alt2	Decreases with increase in pressure
Alt3	Increases with increase in pressure
Alt4	Does not depend upon pressure

85	If pair of lines 3x2 - 2pxy - 3y2 = 0 and 5x2 - 2qxy - 5y2 = 0 are such that each pair bisects the angle between the other pair, then pq is equal to:-
Alt1	-5
Alt2	-20
Alt3	-1
Alt4	-15

86	Hydrogen gas is not liberated when the following metal is added to dilute HCL:-
Alt1	Mg
Alt2	Ag
Alt3	Sn
Alt4	Zn

87	Find out the statement which is incorrect about Duralumin:-
Alt1	It can be forged
Alt2	It has good machinability
Alt3	It is lighter than aluminum
Alt4	It undergoes age hardening

88	If the chords of contact of tangents from $(-4, 2)$ and $(2, 1)$ to the hyperbola $\frac{x^2}{a^2}-\frac{y^2}{b^2}=1$ are at rightangle, then eccentricity of the hyperbola is:-
Alt1	$\sqrt{\frac{3}{2}}$
Alt2	$\sqrt{3}$
Alt3	$\sqrt{\frac{5}{2}}$
Alt4	$\sqrt{2}$

89	During adsorption:-
Alt1	ΔG will be equal to zero
Alt2	ΔG will be negative
Alt3	ΔG will be positive
Alt4	None of these

90	Vinegar is synthesized from alcohol by:-
Alt1	Azotobector
Alt2	Rhizobium
Alt3	Lactobacillus bacteria
Alt4	Bacilli aceti bacteria

91	The formula used to calculate the size of the particle is known as:-
Alt1	Scherrer
Alt2	Bode
Alt3	Kirkendall
Alt4	Laue

92	During complete metabolism of glucose the number of ATP formed from corresponding number of ADP molecules, OR the net gain of energy from one gram of glucose during aerobic respiration is:-
Alt1	38 ATP
Alt2	16 ATP
Alt3	2 ATP
Alt4	36 ATP

93	What is the integral of (2x + 3)(2x - 5) with respect to x?
Alt1	8x3 - 15x2 + c
Alt2	x4 - 2x3 - 15x2 + c
Alt3	8x - 4 + c
Alt4	x3 - 2x2 - 15x + c

94	Which of the following is an intensive property:-
Alt1	Surface tension
Alt2	Temperature
Alt3	Viscosity
Alt4	All of these

95	Link between carbohydrate and fat metabolism or between glycolysis, Kreb's cycle and β-oxidation of fatty acid is:-
Alt1	Pyruvic acid
Alt2	Oxaloacetate
Alt3	Citric acid
Alt4	Acetyl CoA

96	If equations $\vec{r} \times \vec{a} = \vec{b}$ and $\vec{r} \times \vec{c} = \vec{d}$ are consistent, then:-
Alt1	b.c = a.d = 0
Alt2	a.d + b.c = 0
Alt3	a.d + c.d = 0
Alt4	a.d = c.d

97	Fischer-Tropsch process is used for the manufacture of:-
Alt1	Synthetic petrol
Alt2	Ethanol
Alt3	Benzene
Alt4	Ethanoic acid

98	The matrix A satisfies the condition A = AT is:-
Alt1	identity
Alt2	skew-symmetric
Alt3	symmetric

Alt4	adjoint

99	Evolution of CO2 is more than intake of oxygen when:-
Alt1	Glucose is respired
Alt2	Fats are respired
Alt3	Organic acids are respired
Alt4	Sucrose is respired

100	If the order of matrix A is nxp and the order of matrix B is pxm, what is order of matrix AB:-
Alt1	pxp
Alt2	nxm
Alt3	nxp
Alt4	pxm