Sr No.	PG DIP Green Energy Technology
1	Find the missing term in the following series: 3,15,?,63,99,143…?
Alt1	27
Alt2	35
Alt3	45
Alt4	56

2	Choose word from the given options which bears the same relationship to the third word, as the first two bears: Horse : Jockey :: Car : ?
Alt1	Mechanic
Alt2	Chauffeur
Alt3	Steering
Alt4	Brake

3	Food is to Fad as Religion is to……?.....
Alt1	Crucification
Alt2	Notion
Alt3	Superstition
Alt4	Mythology

4	Select the lettered pair that has the same relationship as the original pair of words: Fond: Doting
Alt1	Solicitous: Concern
Alt2	Verbose: Wordiness
Alt3	Flurry: Blizzard
Alt4	Magnificent: Grandiose

5	Which of the following is the same as Emancipate, Free, Release?
Alt1	Liberate
Alt2	Quit
Alt3	Pardon
Alt4	Ignore

6	Spot the defective segment from the following:
Alt1	I met one of the mountaineers
Alt2	that have returned
Alt3	to their base camp
Alt4	the last week

7	Choose the meaning of the idiom/phrase from among the options given: To call names
Alt1	to abuse
Alt2	to recall something
Alt3	to count the prisoners
Alt4	to take attendance

8	Our tour programme fell ------ because of inclement weather.
Alt1	through
Alt2	off
Alt3	out
Alt4	down

9	Choose the option closest in meaning to the given word: POIGNANT
Alt1	unbearable
Alt2	maximal
Alt3	pathetic
Alt4	sharp

10	Choose the antonymous option you consider the best: WANTON
Alt1	rational
Alt2	abstemious
Alt3	dearth
Alt4	deliberate

11	Six people K, L, M, N, O and P are sitting around a table as per the following conditions. i. N and O are opposite each other ii. K is to the right of M iii. L and K are opposite each other iv. N is to the left of P Who is to the left of L ?
Alt1	P
Alt2	M
Alt3	N
Alt4	O

12	Study the following table carefully to answer the questions that follow (15 to 17) :Total number of employees in different departments in an organisation and (of these) percentage of females and males Department Total number of employees Percentage of female employees Percentage of male employees IT 840 45 55 Accounts 220 35 65 Production 900 23 77 HR 360 65 35 Marketing 450 44 56 Customer Service 540 40 60 What is the total number of male employees in the IT and Customer Service departments put together?
Alt1	115
Alt2	786

Alt3	768
Alt4	85

13	Study the following table carefully to answer the questions that follow (15 to 17) :Total number of employees in different departments in an organisation and (of these) percentage of females and males Department Total number of employees Percentage of female employees Percentage of male employees IT 840 45 55 Accounts 220 35 65 Production 900 23 77 HR 360 65 35 Marketing 450 44 56 Customer Service 540 40 60 What is the total number of employees in all departments put together ?
Alt1	3260
Alt2	3310
Alt3	3140
Alt4	3020

14	Select the alternative that logically follows from the two given statements, but not from one statement alone: All Cats are dogs No dogs are rats
Alt1	All cats are rats
Alt2	Some cats are rats
Alt3	No cat is rat
Alt4	None of the above

15	In a certain code language, " When did you come" is written as 'ti na ki ja'. "Will you come again" is written as 'na pa sa ja' and "She will go" is written as 'pa da ra'. How is "again" written in that code language ?
Alt1	Na
Alt2	sa
Alt3	ja
Alt4	da

16	In each of the following questions some statements are followed by two conclusions (i) and (ii). Read the statements carefully and then decide which of the conclsions follow beyond a reasonable doubt. Mark your answer as Statement: The aspirants should apply through a proper channel for permission Conclusions: (i) Those who apply through proper channel will get permission (ii) Those who do not apply through proper channel will not get permission
Alt1	If only conclusion (i) follows

Alt2	If only conclusion (ii) follows
Alt3	If neither conclusion (i) nor (ii) follows
Alt4	If both the conclusions follow

17	The average height of 3 children is 115 cms. If the heights of 2 children are 117 cms. And 112 cms. Respectively, the height of the third child is
Alt1	112 cms.
Alt2	113 cms.
Alt3	115 cms.
Alt4	116 cms.

18	What is the 30% of 40% of 2/5th of 5000?
Alt1	500
Alt2	800
Alt3	240
Alt4	720

19	There are n persons in a room. Each one is shaking hand with the other . Ultimately there are 66 hand-shakes. Then n=
Alt1	11
Alt2	12
Alt3	16
Alt4	33

20	A problem is given to students 10 students choose option A ; 6 students choose option B ; 2 students choose option C; Gopal choose option D; 5 students did not answer. which option is correct if the teacher tells that One-Twelth of the class gave the correct answer.
Alt1	B
Alt2	A
Alt3	C
Alt4	D

21	Which one is used in industrial fermentation to produce beverages?
Alt1	Bacteria
Alt2	Yeast
Alt3	Microalgae
Alt4	Vitamins

22	Number of hydrogen and phosphodiester bonds found in this hypothetical DNA 5’ AGCTCGTAGCTACGTGAC 3’ strand?
Alt1	24 and 18
Alt2	46 and 34

Alt3	23 and 17
Alt4	48 and 36

23	Allergens are?
Alt1	Interferons
Alt2	Lectin compounds
Alt3	Non-parasitic antigens
Alt4	Fungal antigens

24	Cellobiose is
Alt1	Monosaccharide
Alt2	Disaccharide
Alt3	Polysaccharide
Alt4	Polymer of glucose and mannose

25	Glycolis is the _____ process
Alt1	Fermentive
Alt2	Aerobic
Alt3	Anaerobic
Alt4	Both A and B

26	Chlorophyll molecule contains _____ ion in its structure
Alt1	Mg3+
Alt2	Mg2+
Alt3	Ca2+
Alt4	Fe2+

27	Water use efficiency is minimum in
Alt1	CAM plants
Alt2	C3 plants
Alt3	C4 plants
Alt4	All higher plants

28	All amino acid except _____ are specified by more than one codon
Alt1	Arginine and Tryptophan
Alt2	Tryptophan and Methionine
Alt3	Methionone and Arginine
Alt4	Methionine and Threonine

29	The independent process of plant microbe interaction in Agrobacterium infection is
Alt1	Induction of Vir genes
Alt2	T-DNA integration
Alt3	Produc on of phenolics
Alt4	All the above

30	The molecule which has the highest percentage of ionic character among the following is
Alt1	HI

Alt2	HF
Alt3	HCl
Alt4	HBr

31	Dimerisation of cyclopentadiene is an example of
Alt1	Friedel–Crafts reaction
Alt2	Chain reaction
Alt3	Condensation Polymerisation
Alt4	Diels Alder reaction

32	Density of water is
Alt1	1 g/cm3
Alt2	10 g/cm3
Alt3	100 /cm3
Alt4	1000 g/cm3

33	Zeta potential is related to
Alt1	Galvanic corrosion
Alt2	Surface charge
Alt3	Electrophoretic effect
Alt4	Bio molecular reaction

34	Indicator used in redox titration is
Alt1	Eriochrome black T
Alt2	Methyl orange
Alt3	Phenolphthalein
Alt4	Methylene blue

35	Water is a good solvent of ionic salts because
Alt1	It has a high specific heat
Alt2	It has no colour
Alt3	It has a high dipole moment
Alt4	It has a high boiling point

36	The heat energy produced when the human body metabolises 1 gram of fat is
Alt1	30 KJ
Alt2	1 KJ
Alt3	39 KJ
Alt4	29 KJ

37	What are the number of moles of CO_2 which contains 16 g of oxygen?
Alt1	0.5 mole
Alt2	0.2 mole
Alt3	0.4 mole
Alt4	0.25 mole

38	The iron ore magnetite consists of

Alt1	Fe_2O_3
Alt2	Fe_3OH_4
Alt3	$FeCO_3$
Alt4	$3Fe_2O_3$ & $3H_2O$

39	Steel is more elastic than Rubber because
Alt1	Its density is high
Alt2	It is a metal
Alt3	Ratio of stress to strain is more
Alt4	Ratio of stress to strain is less

40	Plants that grow in saline water are called
Alt1	Halophytes
Alt2	Hydrophytes
Alt3	Mesophytes
Alt4	Thallophytes

41	The inherited traits of an organism are controlled by
Alt1	RNA molecules
Alt2	Nucleotides
Alt3	DNA molecules
Alt4	Enzymes

42	If $x + y = k$, $x > 0$, $y > 0$, then xy is maximum when
Alt1	$x = ky$
Alt2	$kx = y$
Alt3	$x = y$
Alt4	None of these

43	The angle between any two diagonals of a cube is
Alt1	$\cos\theta = \sqrt{3}/2$
Alt2	$\cos\theta = 1/\sqrt{2}$
Alt3	$\cos\theta = 1/3$
Alt4	$\cos\theta = 1/\sqrt{6}$

44	Find the equation of the circle with centre (2, 0) and radius 10 units
Alt1	x2+y2-4x-96=0
Alt2	x2+y2-x-96=0
Alt3	x2+y2+4x-96=0
Alt4	x2+y2+4x+96=0

45	Radiocarbon dating technique is used to estimate the age of
Alt1	Rocks
Alt2	Monuments
Alt3	Soil
Alt4	Fossils

46	Eigen vector(s) of the matrix $\begin{bmatrix} 0 & 0 & \alpha \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$
Alt1	(0,0 ,α)
Alt2	(α,0,0)
Alt3	(0,0,1)
Alt4	(0,α,0)

47	What is the total number of positive integer solutions to the equation (x1 + x2 + x3) (y1+ y2 + y3 + y4) = 15?
Alt1	1
Alt2	2
Alt3	3
Alt4	4

48	The formula of the aluminium carbide is
Alt1	Al2C3
Alt2	Al3C4
Alt3	Al4C3
Alt4	AlC2

49	During which of the following major mass extinction events, over 95% of the marine species disappeared from the planet Earth?
Alt1	Ordovician
Alt2	Devonian
Alt3	Permian
Alt4	Triassic

50	Oil raise up the wick in a lamp. The principle involves
Alt1	The diffusion of oil through the wick
Alt2	The liquid state of oil
Alt3	Capillary action phenomenon
Alt4	Volatility of oil

51	One ton refrigeration corresponds to
Alt1	50 kcal/ min
Alt2	50 kcal/ hr
Alt3	80 kcal/ min
Alt4	80 kcal/ hr

52	The vapour pressure of refrigerant should be

Alt1	Lower than atmospheric pressure
Alt2	Higher than atmospheric pressure
Alt3	Equal to atmospheric pressure
Alt4	Could be anything

53	The number of d-electrons in Fe2+ (Z = 26) is not equal to that of
Alt1	p-electrons in Ne (Z = 10)
Alt2	s-electrons in Mg (Z = 12)
Alt3	d-electrons in Fe (Z = 26)
Alt4	p-electrons in Cl (Z = 17)

54	Nowadays many novel chemicals are being synthesized termed as xenobiotics. The unique feature of these is what they are I. Biodegradable II. Non-biodegradable III. Pose on environmental threat IV. They are environment friendly
Alt1	I, III
Alt2	II, III
Alt3	I, III, IV
Alt4	II, III, IV

55	The main buffer system of the human blood is
Alt1	H_2CO_3 - HCO_3
Alt2	H_2CO_3 - CO_3^{2-}
Alt3	CH_3COOH - CH_3COO^-
Alt4	NH_2CONH_2 - NH_2CONH^+

56	Serum has essentially the same composition as plasma EXCEPT that it lacks
Alt1	Albumin
Alt2	Stuart-Power factor
Alt3	Antihemophilic factor
Alt4	Hageman factor

57	Consider the operator $a = x + d/dx$ acting on smooth functions of x. The commutator [a, cos x] is
Alt1	- sin x
Alt2	- cos x
Alt3	cos x
Alt4	0

58	The dynamics of a particle governed by the Lagrangian $L = \frac{1}{2} mx^2 - \frac{1}{2} kx^2 - kxxt$ describes
Alt1	an undamped simple harmonic oscillator
Alt2	a damped harmonic oscillator with a time varying damping factor
Alt3	an undamped harmonic oscillator with a time dependent frequency
Alt4	a free particle

59	The 2 x 2 identity matrix I and the Pauli matrices σx, σy, σz do not form a group under matrix multiplication. The minimum numbers of 2 x 2 matrices, which includes these four matrices, and form a group (under matrix multiplication) is
Alt1	20
Alt2	8
Alt3	12
Alt4	16

60	The first ionization potential of K is 4.34 eV, the electron affinity of Cl is 3.82 eV and the equilibrium separation of KCl is 0.3 nm. The energy required to dissociate a KCl molecule into a K and a Cl atom is
Alt1	8.62 eV
Alt2	8.16 eV
Alt3	4.28 eV
Alt4	4.14 eV

61	The period of 2 sin x cos x is
Alt1	4π 2
Alt2	2π
Alt3	4π
Alt4	π

62	Let A (2, –3) and B(–2, 1) be vertices of a triangle ABC. If the centroid of this triangle moves on the line 2x + 3y = 1, then the locus of the vertex C is the line
Alt1	2x + 3y = 9
Alt2	2x – 3y = 7
Alt3	3x + 2y = 5
Alt4	3x – 2y = 3

63	If x dy/dx = y (log y − log x + 1), then the solution of the equation is
Alt1	y log(x/y) = cx
Alt2	x log(y/x) = cy
Alt3	log(y/x) = cx
Alt4	log(x/y) = cy

64	∫ cosx
Alt1	tanx
Alt2	secx
Alt3	sinx
Alt4	–sinx

65	A circle touches the x-axis and also touches the circle with centre at (0, 3) and radius 2. The locus of the centre of the circle is
Alt1	an ellipse
Alt2	a circle
Alt3	a hyperbola
Alt4	a parabola

66	What is the value of factorial Zero (0!)
Alt1	10
Alt2	0
Alt3	1
Alt4	-1

67	Young's Modulus of material of a wire is defined as
Alt1	Ratio of linear strain to normal stress
Alt2	Ratio of normal stress to linear strain
Alt3	Product of linear strain to normal stress
Alt4	Square root of the ratio between normal stress and linear strain

68	When light wave suffers reflection at the interface between air and glass, the change of phase of the reflected wave is equal to
Alt1	0
Alt2	π/2
Alt3	π
Alt4	2π

69	According to Charles Law
Alt1	PV = Constant
Alt2	P/V = (-) K
Alt3	V/T = Constant
Alt4	VT = K0

70	The resistance of a wire is R ohm. If the wire is stretched to double its length, its resistance will become?
Alt1	2R
Alt2	R/2
Alt3	R/4
Alt4	4R

71	Optical fiber works on the
Alt1	principle of refraction
Alt2	total internal reflection
Alt3	scattering
Alt4	interference

72	Heat transfer takes place according to
Alt1	Zeroth law of thermodynamics
Alt2	First law of thermodynamics
Alt3	Second law of thermodynamics
Alt4	Kirchoff's law

73	The 'Greenhouse effect' in atmosphere is mainly due to increase in atomospheric
Alt1	Ozone

Alt2	Nitrogen
Alt3	Carbon dioxide
Alt4	Carbon monoxide

74	Algal bloom results in
Alt1	Global warming
Alt2	Salination
Alt3	Eutrophication
Alt4	Biomagnification

75	A high biological oxygen demand (BOD) indicates that
Alt1	water is pure
Alt2	absence of microbial action
Alt3	low level of microbial pollution
Alt4	high level of microbial pollution

76	What is the maximum number of phases that can be at equilibrium with each other in a three-component mixture?
Alt1	2
Alt2	3
Alt3	4
Alt4	5

77	Which of the following is always true of a spontaneous process?
Alt1	The process is exothermic
Alt2	The process does not involve any work
Alt3	The entropy of the system increases
Alt4	The total entropy of the system plus surroundings increases

78	Infrared (IR) spectroscopy is useful for determining the certain aspects of the structure of organic molecules because
Alt1	all molecular bonds absorb IR radiation
Alt2	IR peak intensities are related to molecular mass
Alt3	most organic functional groups absorb in a characteristic region of the IR spectrum
Alt4	each element absorbs at a characteristic wavelength

79	Assuming complete dissociation, of the following solutions which will have the highest ionic strength?
Alt1	0.050 M $AlCl_3$
Alt2	0.100 M NaCl
Alt3	0.050 M $CaCl_2$
Alt4	0.100 M HCl

80	Cobalt – 60 is used in a radiation therapy of cancer and can be produced by bombardment of Cobalt – 59 with which of the following?
Alt1	Neutrons
Alt2	Alpha particles

Alt3	Beta particles
Alt4	X – rays

81	Which of the following observations were explained by Planck's quantum theory?
Alt1	Blackbody radiation
Alt2	Emission spectra of diatomic molecules
Alt3	Electron diffraction patterns
Alt4	Temperature dependence of reaction rates

82	Which of the following is an n-type semiconductor?
Alt1	Silicon
Alt2	Diamond
Alt3	Silicon carbide
Alt4	Arsenic-doped silicon

83	Of the following compounds, which is LEAST likely to behave as a Lewis acid?
Alt1	$BeCl_2$
Alt2	$MgCl_2$
Alt3	$ZnCl_2$
Alt4	SCl_2

84	The strongest base in liquid ammonia is
Alt1	NH_3
Alt2	NH_2^-
Alt3	NH_4^+
Alt4	N_2H_4

85	Which of the following is required for both paramagnetism and ferromagnetism?
Alt1	Strong oxidizing conditions
Alt2	Low-spin electron configuration
Alt3	Metallic physical properties
Alt4	Unpaired electrons

86	Of the following atoms, which has the lowest electron affinity?
Alt1	F
Alt2	Si
Alt3	O
Alt4	Ca

87	Which of the following is a primary standard for use in standardizing bases?
Alt1	Ammonium hydroxide
Alt2	Potassium hydrogen phthalate
Alt3	Acetic acid
Alt4	Sulfuric acid

88	Formation of ozone is
Alt1	oxidation reaction

Alt2	reduction reaction
Alt3	photochemical reaction
Alt4	electrochemical reaction

89	Nutrients are recycled in ecosystem by
Alt1	Biogeochemical cycle
Alt2	Energy flow
Alt3	Producers
Alt4	Consumers

90	Driving force in an ecosystem is
Alt1	Plants
Alt2	Producers
Alt3	Solar energy
Alt4	Biomass energy

91	Two coils in differential connection have self inductance of 2mH and 4mH and a mutual inductance of 0.15mH. The equivalent inductance of the combination is
Alt1	5.7 mH
Alt2	5.85 mH
Alt3	6 mH
Alt4	6.15 mH

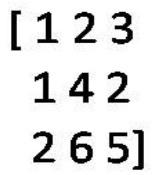
92	If an intrinsic semiconductor is doped with a very small amount of Boron, then the extrinsic semiconductor so formed, the number of electrons and holes will
Alt1	Decrease
Alt2	Increase and decrease respectively
Alt3	Increase
Alt4	Decrease and increase respectively

93	Photovoltaic emf of silicon solar cell is of the order of
Alt1	0.1 Volts
Alt2	0.5 Volts
Alt3	1.1 Volts
Alt4	1.72 Volts

94	The MOSFET switch in its On-state may be considered equivalent to
Alt1	Resistor
Alt2	Inductor
Alt3	Capacitor
Alt4	Battery

95	A memory system has total of 8 memory chips, each with 12 address lines and 4 data lines. The total size of the memory system is
Alt1	6 kbytes
Alt2	32 kbytes
Alt3	48 kbytes

Alt4	64 kbytes

96	The rank of the following matrix is
	
Alt1	0
Alt2	1
Alt3	2
Alt4	3

97	Process of generating electric power and useful heat in a single installation is known as
Alt1	Regeneration
Alt2	Cogeneration
Alt3	Total generation
Alt4	Integral production

98	For a reversible adiabatic process, the change in entropy is
Alt1	Zero
Alt2	Minimum
Alt3	Infinite
Alt4	Unity

99	In a Carnot engine, when the working fluid gives heat to sink,
Alt1	The temperature of sink increase
Alt2	The temperature of the source decrease
Alt3	The temperature of both source and sink decrease
Alt4	The temperature of sink remains same

100	Regenerative cycle thermal efficiency of a Rankine cycle
Alt1	Is same as that of simple Rankine cycle
Alt2	Is always less than that of simple Rankine cycle
Alt3	Is always greater than that of simple Rankine cycle
Alt4	None