Sr No.	PhD Physics
1	Find the missing term in the series: 3, 20, 63, 144, 275,?
Alt1	354
Alt2	468
Alt3	548
Alt4	554

2	Choose word from the given options which bears the same relationship to the third word, as the first two bears: Anaemia: Blood :: Anarchy:?
Alt1	Lawlesness
Alt2	Government
Alt3	Monarchy
Alt4	Disorder

3	Teeth is related to Grit in the same way as Fist is related to……?.....
Alt1	Blow
Alt2	Hand
Alt3	Open
Alt4	Clench

4	Select the lettered pair that has the same relationship as the original pair of words: Reproof: Scold
Alt1	Respite: Spite
Alt2	Romantic: Strong
Alt3	Salient: Prominent
Alt4	Chastise: Erring

5	Choose the alternative, which is similar to the given words: Bleat : Bray : Grunt
Alt1	Bark
Alt2	Croak
Alt3	Cry
Alt4	Scream

6	Spot the defective segment from the following:
Alt1	I wish
Alt2	I have a car
Alt3	to go shopping
Alt4	in the rain

7	Choose the meaning of the idiom/phrase from among the options given: Out of sorts
Alt1	unwell
Alt2	irrelevant
Alt3	in disorder
Alt4	out of love

8	The rowdy was at last done -------.
Alt1	over
Alt2	off
Alt3	away
Alt4	away with

9	Choose the option closest in meaning to the given word: BUCOLIC
Alt1	rustic
Alt2	utopian
Alt3	peaceful
Alt4	noisy

10	Choose the antonymous option you consider the best: CALLOW
Alt1	immature
Alt2	green
Alt3	clumsy
Alt4	veteran

11	If the seventh day of a month is three days earlier than Friday, what day will it be on the nineteenth day of the month ?
Alt1	Sunday
Alt2	Monday
Alt3	Wednesday
Alt4	Friday

12	Water is related to Ocean in the same way as Snow is related to ……
Alt1	Peaks
Alt2	Hail
Alt3	Glacier
Alt4	Mountain

13	A's father's brother's father is D. how is D related to A ?
Alt1	Father
Alt2	Grandfather
Alt3	Uncle
Alt4	Son

14	Find the odd man out:
Alt1	Squash
Alt2	football
Alt3	hockey
Alt4	Cricket

15	In a certain code language, if CRICKET is coded as 3923564, ROCKET is coded as 913564 and KETTLE is coded as 564406, then how is LITTLE coded in that language ?
Alt1	024406
Alt2	240406
Alt3	20446
Alt4	200446

16	At what angles are he hands of a clock inclined at 20 minutes past 7 ?
Alt1	80 degrees
Alt2	90 degrees
Alt3	100 degrees
Alt4	120 degrees

17	Odd one out: 2,4,6,8
Alt1	2
Alt2	4
Alt3	6
Alt4	8

18	Which is smallest:
Alt1	Quarter of 140
Alt2	Double of 4*4
Alt3	7*5
Alt4	Half of 72

19	What is the next alphabet in the following series Z D X H V L T ?
Alt1	Q
Alt2	N
Alt3	P
Alt4	O

20	How many times is the abbrevations FB shorter than the word FACEBOOK?
Alt1	4times
Alt2	3times
Alt3	5times
Alt4	Many

21	Consider a one dimensional H atom with potential $V(x) = -\delta(x)$. Let $\phi_\alpha(x) = \exp(-\alpha\|x\|)$ be a trial wave function. For what value of α energy is minimum
Alt1	1
Alt2	½
Alt3	2
Alt4	1/3

22	The following series $\sum_{n=1}^{\infty} n^2 \left(\frac{i}{2}\right)^n$ is
Alt1	Divergent upto a limit and then is convergent
Alt2	Convergent upto a limit and then is divergent
Alt3	Convergent
Alt4	Divergent

23	The selection rules for transitions to occur for an diatomic vibrating rotator is:-
Alt1	$\Delta v = \pm 1, \pm 2, \ldots$ and $\Delta J = \pm 1$
Alt2	$\Delta v = \pm 1, \pm 2, \ldots$ and $\Delta J = \pm 1, \pm 2, \ldots$
Alt3	$\Delta v = \pm 1, \pm 2, \ldots$ and $\Delta J = 0, \pm 1$
Alt4	$\Delta v = 0, \pm 1, \pm 2, \ldots$ and $\Delta J = \pm 1$

24	If a particle moves on a circular path (r, θ), the generalized coordinates will be :-
Alt1	r and θ
Alt2	r
Alt3	θ
Alt4	x and y

25	The area of a triangle specified by the vertices (1,3,2), (3,-4,2) and (5,0,-5) is:-
Alt1	$\frac{\sqrt{2723}}{2}$
Alt2	$\frac{\sqrt{3081}}{2}$
Alt3	$\frac{\sqrt{1810}}{2}$
Alt4	$\frac{\sqrt{1881}}{2}$

26	The generator function (F1(q, Q, t)) for the time (t) dependent canonical transformations Q = p tan t and P = -p cot t is:-
Alt1	F1(q, Q, t) = qQ cot t

Alt2	F1(q, Q, t) = pQ sin t
Alt3	F1(q, Q, t) = pQ cos t
Alt4	F1(q, Q, t) = qQ sin t

27	The eigen values of the matrix $\begin{pmatrix} \frac{1}{2} & \frac{i\sqrt{3}}{2} \\ \frac{i\sqrt{3}}{2} & \frac{1}{2} \end{pmatrix}$ are
Alt1	$\frac{1 \pm i\sqrt{3}}{2}$
Alt2	$\frac{1 \pm \sqrt{3}}{2}$
Alt3	$\frac{1 \pm \sqrt{3}}{4}$
Alt4	$\frac{1 \pm \sqrt{3}}{4}$

28	The term symbol corresponding to an nd10 electronics configurations is :-
Alt1	3P0
Alt2	2S1/2
Alt3	2P1/2
Alt4	1S0

29	The relationship between the average photon energy of a Bose-Einstein gas and its temperature is:-
Alt1	$E \propto T$
Alt2	$E \propto \sqrt{T}$
Alt3	$E \propto \frac{1}{\sqrt{T}}$
Alt4	$E \propto \frac{1}{T}$

30	The moment of inertia of a rigid body about the X axis (Ixx) with mass for ith particle 'mi'at (x, y, z) is:-
Alt1	$\sum_i m_i (x^2+z^2)$
Alt2	$\sum_i m_i (x^2+y^2+z^2)$
Alt3	$\sum_i m_i (z^2+y^2)$
Alt4	$\sum_i m_i (x^2+y^2)$

31	The Rank of the matrix $\begin{pmatrix} 8 & -4 \\ -2 & 1 \\ 6 & -3 \end{pmatrix}$ is
Alt1	Zero
Alt2	Two
Alt3	Three
Alt4	One

32	The Levi-Civita symbol satisfies :-
Alt1	$\varepsilon_{132} = \varepsilon_{213} = \varepsilon_{321} = -1$
Alt2	$\varepsilon_{132} = \varepsilon_{213} = \varepsilon_{321} = 1$
Alt3	$\varepsilon_{312} = \varepsilon_{321} = \varepsilon_{213} = 1$
Alt4	$\varepsilon_{312} = \varepsilon_{231} = \varepsilon_{213} = -1$

33	To satisfy the canonical transformations (q,p $\rightarrow$Q,P) Q = $q^{\alpha}\cos\beta p$ and P = $q^{\alpha}\sin\beta p$, the conditions are
Alt1	$\alpha = 1/2\ ,\ \beta = 0$
Alt2	$\alpha = 1/2\ ,\ \beta = 1$
Alt3	$\alpha = 1/2,\ \beta = 2$

Alt4	$\alpha = 1/2$, $\beta = ½$

34	The partition function of a system that obeys Maxwell-Boltzmann statistics is given by z= aVT4,where ais a constant. The internal energy of the system is:-
Alt1	4NkBT
Alt2	3NkBT
Alt3	2NkBT
Alt4	NkBT

35	In a grand canonical ensemble, a system S of fixed volume is in contact with a large reservoir R. Then which of the following is correct?
Alt1	S can exchange neither energy nor particles with R
Alt2	S can exchange both energy and particles with R
Alt3	S can exchange only energy with R
Alt4	S can exchange only particles with R

36	The bob of a pendulumof mass 'm' and length'l' makes angle 'θ' while oscillating. The Lagrange's equation of the bob is:-
Alt1	$1\ddot{\theta} + g\theta = 0$
Alt2	$1\ddot{\theta} - g\theta = 0$
Alt3	$m\ddot{\theta} + g\theta = 0$
Alt4	$1\ddot{\theta} - m\theta = 0$

37	Fourth momentum vector (p_4) of a particle with rest mass m_0 and relativistic mass 'm' moving with velocity 'v' in relativistic mechanics is, given $i = \sqrt{-1}$
Alt1	i m0c2
Alt2	i mc
Alt3	m0c
Alt4	i mc2

38	The polar form of $\left(\frac{6+8i}{4-3i}\right)^2$ is
Alt1	$4(\cos\pi + i\sin\pi)$

Alt2	$4(\cos\pi - i\sin\pi)$
Alt3	$2(\cos\pi - i\sin\pi)$
Alt4	$2(\cos\pi + i\sin\pi)$

39	The rotational spectra of polyatomic molecule falls in :-
Alt1	Microwave region
Alt2	Visible region
Alt3	Infrared region
Alt4	X-ray region

40	Consider the following vectors (a) [2,-4], (b) [1,9] and (c) [3,5]
Alt1	(a) and (b) are linearly dependent and (c) is independent of other two
Alt2	All are linearly dependent
Alt3	(a) and (c) are linearly dependent and (b) is independent of other two.
Alt4	All are linearly independent

41	The Laplace transform of tet is:-
Alt1	(s + 1) -2
Alt2	(s + 1) 2
Alt3	(s - 1) 2
Alt4	(s - 1) -2

42	For small oscillation of a particle in rigid body, the potential energy must satisfy the condition:-
Alt1	$\frac{\partial^2 V}{\partial q_i q_j} < 0$
Alt2	$\frac{\partial V}{\partial q} > 0$
Alt3	$\frac{\partial V}{\partial q} < 0$
Alt4	$\frac{\partial^2 V}{\partial q_i q_j} > 0$

43	A typical differential equation for damping oscillator with displacement '$\eta(t)$' can be represented as

Alt1	$\alpha\ddot{\eta} - \beta\dot{\eta} + \gamma\eta = 0$
Alt2	$\alpha\ddot{\eta} + \beta\dot{\eta} - \gamma\eta = 0$
Alt3	$\alpha\ddot{\eta} - \beta\dot{\eta} - \gamma\eta = 0$
Alt4	$\alpha\ddot{\eta} + \beta\dot{\eta} + \gamma\eta = 0$

44	For large N, the Stirling's approximation of $\log(N!)$ is
Alt1	$N\ln(n) + N - 1$
Alt2	$N\ln(N) - N + 1$
Alt3	$N\ln(N) + N$
Alt4	$N\ln(N) - N$

45	Consider a normalized wave function $\Psi(x)$. Assume that a system is in a state described by $\Psi(x) = A\psi(x) + B\psi^*(x)$, where A and B are complex numbers. The normalization condition is of $\Psi(x)$ is (where $D = \int dx\lvert\psi(x)\rvert^2$).
Alt1	$\lvert A\rvert^2 + \lvert B\rvert^2 = 1$
Alt2	$\lvert A\rvert^2 + \lvert B\rvert^2 + A^* B D^* + A B^* D = 1$
Alt3	$\lvert A\rvert^2 + \lvert B\rvert^2 + \lvert D\rvert^2 = 1$
Alt4	$\lvert A\rvert^2 + \lvert B\rvert^2 + A^* B D + A B^* D^* = 1$

46	Find the Fourier transform of the following equation: $f(x) = \begin{cases} xe^{-x}, x > 0 \\ 0, x < 0 \end{cases}$

Alt1	$1/(1-iw)^2\sqrt{2\pi}$
Alt2	$1/(1+iw)^2\sqrt{2\pi}$
Alt3	$1/(1-iw)^2\sqrt{\pi}$
Alt4	$1/(1+iw)^2\sqrt{\pi}$

47	Functions $f_1(x), f_2(x), \ldots$ defined on some interval $a \le x \le b$ can be called to be orthogonal on this interval if $\int_a^b p(x) f_m(x) f_n(x) dx = 0$, where p(x) is the weight function which has to satisfy
Alt1	p(x) can be any real value
Alt2	p(x) > 0
Alt3	p(x) = 0
Alt4	p(x) < 0

48	The number of degenerate states in the case of a hydrogen atom, for a given value of the principal quantum number N is
Alt1	N2 /2
Alt2	N2 - 1/2
Alt3	4 N2
Alt4	2N2

49	Integrate the function $\frac{Z^3}{2Z-i}$ counter clock wise around an unit circle and the outcome is
Alt1	$\pi / 2$
Alt2	$\pi / 8$
Alt3	$\pi / 4$

Alt4	$\pi/16$

50	A particle of mass m is moving on a spherical surface. The angular momentum corresponding to ϕ:-
Alt1	$mr^2 sin^2\theta\dot{\varphi}$
Alt2	$mr^2\theta\dot{\varphi}$
Alt3	$\mathrm{mr}^2\dot{\theta}$
Alt4	$mr^2 sin^2\theta\dot{\theta}$

51	The solution for the initial value problem : $L\frac{dI}{dt}+RI=0$ with $I(0)=I_O$ is :
Alt1	$I=I_O\exp\{-RLt\}$
Alt2	$I=I_O\exp\left\{-\frac{R}{L}t\right\}$
Alt3	$I=I_O\exp\left\{\frac{R}{L}t\right\}$
Alt4	$I=I_O\exp\{RLt\}$

52	Find the function $f(t)$ for the Laplace transform $L(f)=\frac{6}{(s+2)(s-4)}$ using partial fractions.
Alt1	exp(4t) - exp(-2t)
Alt2	exp(4t) + exp(-2t)
Alt3	exp(-4t) - exp(-2t)
Alt4	exp(4t) - exp(2t)

53	What is the energy of the particles that have successfully escaped by tunnelling process ?
Alt1	Greater than initial energy
Alt2	Less than initial energy
Alt3	Zero

Alt4	Same as initial energy

54	For an infinite square well centered at the origin and that centered at x = a/2 which of the following statements is true about their energy and parity eigen states ?
Alt1	For both the cases, the energy eigen states are also parity eigen states
Alt2	For the well centered at x = 0, the energy eigen states are also parity eigen states, but not so for the well centered at x = a/2.
Alt3	The energy eigen states are not the same as parity eigenstates
Alt4	For the well centered at x = a/2, the energy eigen states are also parity eigen states, but not so for the well centered at x = 0.

55	Hamilton-Jacobi equation is:-
Alt1	+ ∂H/ ∂q = 0
Alt2	S + ∂H/ ∂t = 0
Alt3	H + ∂S/ ∂t = 0
Alt4	+ ∂H/ ∂p = 0

56	The function $x\|x\|$ is
Alt1	An even function
Alt2	It exhibits both the properties
Alt3	It is an odd function only for real values
Alt4	An odd function

57	Given the vectors $\vec{A}=[1 \quad 1 \quad 0]$, $\vec{B}=[3 \quad 2 \quad 1]$ and $\vec{C}=[1 \quad 0 \quad 2]$. The angle between the vectors $\vec{A}$ and $\vec{B}+\vec{C}$ is
Alt1	68 degrees
Alt2	58 degrees
Alt3	48 degrees
Alt4	38 degrees

58	The ground state energy of a proton confined to a one-dimensional infinite potential well of width 100 pm is
Alt1	0.00515 eV
Alt2	0.0206 eV
Alt3	0.0824 eV
Alt4	0.0103 eV

59	The degrees of freedom of 3 particles fixed at the vertices of a triangle is:-
Alt1	1
Alt2	3
Alt3	9
Alt4	6

60	Two electrons are ejected in opposite direction from a radioactive source at rest in laboratory and speed of each electron is 0.67c. The speed of one electron seen by other in relativistic mechanics is:-
Alt1	0.67c
Alt2	0.92c
Alt3	0
Alt4	1.34c

61	Consider a system of two particles with mass ratio as 3:4 moving in one dimension. If the smaller mass moves with velocity 60m/s, the velocity of larger mass in center of mass frame is :-
Alt1	+60 m/s
Alt2	-45 m/s
Alt3	-30 m/s
Alt4	-60 m/s

62	The solution $u(x,y)$ of the equation $u_x - u_y = 0$, obtained using separation of variables is
Alt1	$u = C\exp(-k(x-y))$
Alt2	$u = C\exp(-k(x+y))$
Alt3	$u = C\exp(k(x-y))$
Alt4	$u = C\exp(k(x+y))$

63	If a rigid body rotates about z axis by velocity $\bar{\Omega}$, the rate of change of unit vector along x axis is
Alt1	$\bar{\Omega}x\bar{k}$
Alt2	$\bar{\Omega}x\bar{i}$
Alt3	$\bar{\Omega}x\bar{j}$
Alt4	$\bar{0}$

64	For a particle moving under the influence of a central force, which of the following is not true?
Alt1	Total energy is conserved
Alt2	Linear momentum is conserved
Alt3	Areal velocity is conserved

Alt4	Angular momentum is conserved

65	Assume that you are dropping a metallic sphere from a height of 10 meters and the time taken for the fall is T1 seconds. Let the time taken for the fall from 20 meters is T2 meters. Which of the following is true?
Alt1	T2 is more than twice T1
Alt2	T2 is equal to T1
Alt3	T2 is equal to twice T1
Alt4	T2 is less than twice T1

66	The general solution of the equation $x^2 \frac{d^2y}{dx^2} + x\frac{dy}{dx} + y = 0$ is
Alt1	A sin(ln(x)) + B sin (ln(x))
Alt2	A cos(ln(-x)) + B cos (ln(-x))
Alt3	A cos(ln(x)) + B cos (ln(x))
Alt4	A cos(ln(x)) + B sin (ln(x))

67	The Euclidean norm of the vector [3 2 -2 4 0] T:-
Alt1	$\sqrt{26}$
Alt2	$\sqrt{33}$
Alt3	$\sqrt{36}$
Alt4	$\sqrt{23}$

68	Consider an ideal gas of monatomic molecules in a volume . Then the number of micro-states and its energy are related by:-
Alt1	$\Omega(E) \propto E$
Alt2	$\Omega(E) \propto E^{\frac{3N}{2}}$
Alt3	$\|A\|^2 + \|B\|^2 + \|D\|^2 = 1$
Alt4	$\Omega(E) \propto E^{\frac{N}{2}}$

69	Calculate the effective magnetic moments of Ho3+ and the identify from the following:-
Alt1	16.3 B
Alt2	10.63 B
Alt3	1.63 B

Alt4	5.63 B

70	The line spacing between rotational levels of CO2 molecule is:-
Alt1	4B
Alt2	2B
Alt3	12B
Alt4	6B

71	The experimental mapping of the Fermi surface is carried out using:-
Alt1	De Haas Alphen effect
Alt2	Bose-Einstein Condensation effect
Alt3	Quantum Tunnelling effect
Alt4	Rontgen effect

72	Melting point of a nano-material (<100 nm particle size) as compared to the melting point of the same bulk material would :-
Alt1	Decrease
Alt2	Increase
Alt3	Double
Alt4	No change

73	The diffraction pattern mapping of a crystal corresponds to its:-
Alt1	Direct Lattice
Alt2	Reciprocal Lattice
Alt3	Neither Direct & Reciprocal Lattice
Alt4	Both Direct & Reciprocal Lattice

74	Among single, double and triple bonds, the molecular vibrational frequency of _____ bond is high.
Alt1	Single
Alt2	Independent of bond nature
Alt3	Double
Alt4	Triple

75	The maximum population of rotational level of a diatomic molecule whose rotational constant B is given by :-
Alt1	$J = \sqrt{\frac{kT^2}{2hcB}} - \frac{1}{2}$
Alt2	$J = \sqrt{\frac{kT^2}{2hcB}} - \frac{1}{2}$

Alt3	$J = \sqrt{\frac{kT}{2hcB}} - \frac{1}{2}$
Alt4	$J = \sqrt{\frac{T}{2hcB}} - \frac{1}{2}$

76	The electron density in a metal A at absolute zero is twice that in a metal B, their Fermi energies are in the ratio:-
Alt1	(0.7) 2/3
Alt2	(0.5) 2/3
Alt3	(2.0) 2/3
Alt4	(0.2) 2/3

77	The number of distinct ways to assign N electrons to G spin orbitals is:-
Alt1	$\frac{1}{N!(G-N)!}$
Alt2	$\frac{G+1}{N!(G-N)!}$
Alt3	$\frac{G!}{N!(G-N)!}$
Alt4	$\frac{N!}{(G-N)!}$

78	The ESR spectrum of an unpaired electrons with two equivalent protons shows three lines whose intensities are in the ratio of :-
Alt1	1:1:1
Alt2	1:3:1
Alt3	1:2:1
Alt4	3:2:1

79	The total yearly world consumption of energy is approximately 4.0 X1020 J. How much mass would have to be completely converted into energy to provide this amount of energy?
Alt1	1.3 X1012 kg
Alt2	1.3X 104 kg
Alt3	4.4X 103 kg
Alt4	4.4 X105 kg

80	The curvature at the edges of band diagram (E vs k) is essentially due to the change in:-
Alt1	Conductivity
Alt2	Crystallographic structure
Alt3	Relaxation time of the electrons
Alt4	Effective mass of the electron

81	In a rotational fine structure of electronic vibrational spectra, B' and B are rotational constants of higher and lower levels. If B' > B'', P branch will converge to a band head on the _____ side of the band origin with the band head at the ___ end of spectrum.
Alt1	High wave number, red
Alt2	Low wave number, red
Alt3	Low wave number, violet
Alt4	High wave number violet

82	According to Free electron model, the average K.E of the electron at an absolute temperature T is :-
Alt1	2 KT
Alt2	1/2 KT
Alt3	3/2 KT
Alt4	KT

83	If the Fermi energy of a metal is 2eV, the Fermi temperature of the metal is:-
Alt1	0.32X104 K
Alt2	2.32 X104 K
Alt3	1.32 X104 K
Alt4	3 X104 K

84	Rutherford's experiments, in which he bombarded a very thin gold foil with alpha particles, showed that :-
Alt1	none of the α particles were able to penetrate the foil.
Alt2	most of the α particles passed through the foil with negligible deflection but some were deflected through large angles.
Alt3	all of the α particles passed through the foil and were deflected through large angles
Alt4	all of the α particles passed through the foil without significant deflection.

85	During collision if molecule gain rotational energy from the photon, it give rise to series of lines on low frequency side of excited line. Such spectral lines are known as :-
Alt1	Stokes lines
Alt2	Anti-stokes lines
Alt3	Overtones
Alt4	Rayleigh lines

86	The magnetic susceptibility of a Diamagnet is directly proportional to:-
Alt1	The mean square of the atomic radius
Alt2	Inversely proportional to the Temperature
Alt3	The volume of the substance
Alt4	Directly proportional to the Temperature

87	An oscillator converts :-
Alt1	a.c. power to d.c. power
Alt2	d.c. power to a.c. power
Alt3	mechanical power to d.c. power
Alt4	mechanical power to a.c. power

88	The cosmic microwave background radiation is:-
Alt1	produced from processes going on all over the present universe
Alt2	radiation from the quasars that is redshifted
Alt3	radiation from the Sun.
Alt4	radiation from the Big Bang that was around when electons and protons conbined to form neutral hydrogen atoms.

89	A moderator in a nuclear reactor is used to slow down:-
Alt1	alpha particles
Alt2	beta particles
Alt3	protons
Alt4	neutrons

90	What are the number of protons Z and neutrons N in the missing fragment X of the following fission reaction? ${}^{1}n_0 + {}^{235}U_{92} \rightarrow {}^{140}Cs_{55} + 4\ {}^{1}n_0$
Alt1	Z = 37 and N = 92
Alt2	Z = 92 and N = 37
Alt3	Z = 55 and N = 37
Alt4	Z = 37 and N = 55

91	In a transistor, the base current is about . of the emitter.
Alt1	0.25
Alt2	1
Alt3	0.05
Alt4	0.5

92	A p-n-p-n diode when forward-biased has two stable states. One is very high resistance state and other has very low resistance state respectively, of the order of:-
Alt1	100 M Ω and 10 Ω
Alt2	10 Ω and 1 Ω
Alt3	100 GΩ and 100 M Ω
Alt4	0.1 Ω and 10 Ω

93	A single stage amplifier contains _____ and associated circuitry
Alt1	Two transistor
Alt2	One transistor
Alt3	One p-n-p transistor and one n-p-n transistor

Alt4	Four transistors

94	In a transistor _____
Alt1	IE = IC+IB
Alt2	IC = IE+IB
Alt3	IC = IE-3IB
Alt4	IC = IE+4IB

95	In the decay scheme AXZ → AYZ-1 + _____ + _____the blanks should contain
Alt1	β- and p
Alt2	β+ and v
Alt3	β+ and n
Alt4	β- and v

96	Which of the expression is NOT correct according to Boolean theorem?
Alt1	A.1 = A
Alt2	A+0 = A
Alt3	A+A = A
Alt4	A+A = 2A

97	A β particle traveling at 0.980c has a total energy of:-
Alt1	2.55 MeV
Alt2	0.511 MeV
Alt3	0.245 MeV
Alt4	0.756 MeV

98	The overall gain of a multi-stage amplifier is 140. The 20% of the output voltage is feed back to the input, the gain of the amplifier with the feedback is :-
Alt1	140
Alt2	17.5
Alt3	1.75
Alt4	175

99	The total gain of a multi-stage amplifier is less than the product of the gains of individual stage due to:-
Alt1	Power loss in coupling device
Alt2	Total gain is never loss than the product of individual stage gain
Alt3	Loading effect of next stage
Alt4	Use of many capacitors

100	The nuclear radius of 27Al13 is approximately :- Given a0= 1.5fm
Alt1	11.2 fm
Alt2	1.05 fm
Alt3	4.50 fm
Alt4	0.350 fm