Model Questions for B.Tech and Undergraduate Programs in Health Sciences Part 1 – Physics

1.	The constant $\mu_0 \epsilon_0$ has the same dimension as				
	a) reciprocal of velo	city	b) square of velocit	ty	
	c) velocity		d) reciprocal of squ	are of velocity	
2.	If mass of electron i	s9.11x10- ³¹ kg, the nun	nber of electrons in 10	lg will be	
	a) 6x10 ²⁸	b) 4.5x10 ²⁴	c) 1.1x10 ²⁸	d) 1.09x10 ²⁷	
3.	The number of sign	ificant figures in 0.004	50 are		
	a) 5	b) 4	c) 3	d) 7	
4.	A particle is moving	g with a velocity v = K	(yi+xj), where K is a c	constant. The general	
	equation for the pat	h described by the par	ticle is		
	a)y=x ² +constant	b) y ² =x+constant	c)x y=constant	d) y ² =x ² +constant	
5.		nt of inertia 1 kg m² ab . The torque which can			
	a) π/12	b) π/15	с) п /18	d) π/30	
6.	after 10s is	itial velocity of 3i+4j ar		0.4i+0.3j.Its speed d) 7√2 units	
	a) 7 units	b) 8.5 units	c) 10 units	d) / v2 units	
7.	Motion of planets in	n the solar system is an	example of the conse	ervation of	
	a)mass	b) linear momentun	n c) angular moment	tum d) energy	
8.	The velocity with w gravitational field, o	hich a projectile must loes not depend on	be launched so that it	escapes earth's	
	a) mass of the earth		b) mass of the proj	ectile	
	c) radius of the proj	ectile's orbit	d) gravitational con	nstant	
9.	An object is immers	ed in a fluid. For the o	bject to become invisi	ible it should	
	a) behave as a perfe	ct reflector	b) absorb al	ll light falling on it	
	c) have refractive in	dex 1			

A

d) have refractive index exactly matching with the surrounding fluid

- 10. A particle is vibrating in simple harmonic motion with an amplitude 0.04 m. At what displacement from the equilibrium position is its energy half potential and half kinetic?
 - a) 1 cm b) 2 cm c) 2 2 cm d) 2 cm.

A lady wearing high heel shoes balances on a single heel. The heel is circular with a diameter 0.8 cm. The pressure exerted by the heel on the horizontal floor is 7.8 × 106 N/m². The mass of the lady is
a) 40kg
b) 50kg
c) 60kg
d) 10kg

- 12. Dettol can reach fine cavities formed in wounds to clean becausea) Surface tension of Dettol is greater than that of waterb) Surface tension of Dettol is equal to that of water
 - c) Dettol is highly viscous
 - d) Dettol is less viscous

13. Temperature of human body is 98.4° F. The corresponding temperatures on the celsius scale and kelvin scale are

a) 0°C and 273K	b) 273 K and 17°C
c) 36.9°C and 309.9 K	d) 17.2°C and 120.2 K.

- 14. If the sun becomes twice as hot,
 - a) the output radiant energy will be sixteen times larger
 - b) it will radiate predominantly ultraviolet
 - c) it will radiate monochromatic radiation
 - d) it becomes dark.
- 15. When water is heated convection currents occur because
 - a) warm water is heavier than coldwater
 - b) heat pushes the water up
 - c) warm water is less dense than coldwater
 - d) cold water is less dense than warm water

16. Velocity of light in a transparent medium is2 /3 of that in air. The refractive index of the medium is

a) 0.67 b) 1.1 c) 1.5 d) 0.12.

17.	The source of energy for the sun to radiate is		
	a) fission	b) thermo-electric power	
	c) fusion	d) photoelectric effect.	

18. At a distance 4 metre from a lamp the intensity of illumination is 6 lux. The illuminating power of lamp isa) 22 candelab) 9 candelac) 28 candelad) 96 candela.

19. If a star moves away from the earth, the spectral line of the stara) shifts toward the red end of the spectrumb) shifts toward the violet end of the Spectrumc) does not shiftd) disappears

20. In the case of a parallel plate capacitor, when the distance between the two plates is reduced to one third and the area of the plate doubled, the capacitance
a) remains the same
b) is doubled
c) increases to five times
d) increases to six times

21. If two identical point charges separated by 3 m experience a force of 10 newton, then the individual charge is

```
a) 100µ C b) 10µC c) 1µC d) 0.1µ C
```

A magnetic material has a magnetization of 3200 A/m and flux density of 14π × 10⁻⁴ weber/m². The magnetizing force is
a) 10 A/m
b) 200 A/m
c) 3000 A/m
d) 300 A/m.

23. The vertical component of earth's magnetic field is zero ata) magnetic equatorb) magnetic polesc) geographic polesd) at 90° latitude.

24.	Photon is a			
	a) quantum of matte	r	b) positively charged	l particle
	c) negatively charged		d) quantum of light.	
25.	The elementary part	icles having rest mass	equal or greater than t	hat of nucleons are
	a) mesons	b) leptons	c) photons	d) baryons.
24		1 () 1		
26.	-	charge of proton and	α -particle is	1) 4 1
	a) 2 : 4	b) 2 : 1	c) 1 : 4	d) 4 : 1.
27.	Positive rays			
	a) cannot ionise gase	S		
	b) have no effect on	photographic plate		
	c) cannot penetrate even through substances of small thickness			
	d) can disintegrate metals or cause Sputtering			
28.	When X-rays pass th	с .		
	a) produce light trac		b) ionise the gas	
	c) produce fumes in	air	d) accelerate gas ato	ms.
29.	Which of the follow	ing has largest deBrog	glie wavelength λ, pro	vided all have equal
	velocity?			-
	a) CO_2 molecule	b) NH ₃ molecule	c) proton	d) O ₂ molecule.
• •				
30.			r by bombarding the n	ucleus is called
	a) natural radioactiv	e	b) chain reaction	
	c) cosmic radiation		d) artificial transmut	tation
31.	The most important	advantage of nuclear (energy is	
	a) less time is require	ed to generate the ener	·gy	
			uce huge amount of er	ergy
	c) less safety measur	es are sufficient		
	d) many operational	difficulties are not the	pre	

- 32. An increase of temperature of a semiconductor decreases
 - a) the resistivity b) the band gap
 - c) the conductivity d) size of the semiconductor.
- 33. In an *n*-type semiconductor, the position of the Fermi level
 - a) is lower than the centre of the energy gap
 - b) is at the centre of the energy gap
 - c) is higher than that of the energy gap
 - d) can be anywhere depending on the doping concentrates.
- 34. At 0 K, germanium is a
 - a) conductor

b) insulator

- c) superconductor d) semiconductor.
- 35. A *p*-type silicon crystal is electrically
 - a) positive
 - c) neutral

- b) negative
- d) either positive or negative.

36. 37.	The real gas behave like an ideal gas when a) temperature and pressure are low b) temperature is low or pressure is high c) temperature is high or pressure is low d) temperature and pressure are high The compound in which P remains in the +3 oxidation state is					
	a) P ₂ O ₅	b) P ₄ O ₁₀	c) P ₄ O ₆	d) H ₃ PO ₄		
38.	What is the co-ordin	ation number for Cr in	$K_3[Cr(C_2O_4)].3H_2O?$			
	a) 3	b) 4	c) 6	d) 5		
39.	The secondary valen	cy of Co in [Co (en) ₂ Cl	2]+ is			
	a) 6	b) 4	c) 2	d) 8		
40.	Which of the followi	ng ligands forms a Ch	elate ?			
	a) Acetate	b) Oxalate	c) Cyanide	d) Ammonia		
41.	Identify the least stal	ole among the followir	ng			
	a) Li-	b) Be-	c) B-	d)C-		
42.	Paschen series are pr	oduced when electron	s from the outer orbits	jump to		
	a) 2 nd orbit	b)3 rd orbit	c) 4 th orbit	d) 5 th orbit		
43.	The series of line pre	sent in the visible regi	on of the hydrogen spe	ectrum is		
	a) Lyman	b) Balmer	c) Paschen	d) Brackett		
44.	The bond order of N	² molecule is				
	a) 1	b) 2	c) 3	d) 2.5		
45.	The bascity of Phos	phorous acid , Orthop	phosphoric acid and M	letaphosphoric acid		
	a) 3,2and1	b)2,3 and 1	c) 2,1 and 3	d) 1,2 and 3		

46.	Change in enthalpy for the reaction $2H_2O_2(l) \rightarrow 2H_2O(l) + O_2(g)$, if heat of formation $H_2O_2(l)$ and $H_2O(l)$ are -188 KJ /mol, and -286 KJ /mol respectively is			
	H ₂ O ₂ (I)and H ₂ O(I) a			
47.	Water is a			
	a) Protophobic solv	ent	b) protophilic solve	nt
	c) amphiprotic solv	ent	d) aprotic solvent	
48.	Which of the follow	ving has the lowest pH	I value	
	a) 1M HCl	b) 1M NaOH	c) 1M H ₂ SO ₄	d) 1M C ₂ H ₅ OH
49.	Which among the f	ollowing rate constant	t indicates first order re	action?
	a) 2 x 10 ⁻⁵ sec ⁻¹		b) 2 x 10 ⁻⁵ mol lit- se	C ⁻¹
	c) 2 x 10 ⁻⁵ mol ⁻² lit ² s	Sec ⁻¹	d) 2×10^{-5} mol ⁻¹ lit se	2C ⁻¹
50.	The tyndall effect a	ssociated with colloid	al particles is due to	
	a) Presence of electr	rical charge	b) scattering of light	t
	c) absorption of ligl	nt	d) reflection of light	t
51.	Which one of the fo	llowing is lyophilic co	olloid?	
	a) Milk	b) gum	c) fog	d) blood
52.	Which of the follow	ving aqueous solutions	s will conduct current c	uite well?
	a) Glycerol	b) HCl	c) Sugar	d) pure water
53.	The emf of the cell	reaction is positive wł	nen the free energy of th	ne cell reaction is
	a) +ve		b)-ve	
	c) zero		d) cannot be predic	ted
54.	Which of the follow carried out using P	-	at the anode when the e	lectrolysis of CuCl2 is
	a) Cu→Cu²+ + 2e-	b) $2Cl^2 \rightarrow Cl_2 + 2e^2$	c) 2H ₂ O→O ₂ + 4H ⁺	d) 2Cu→Cu+ + e-=
55.	The amount of elec of AlCl ₃ will be	tricity required to dep	posit one mole of alumi	nium from a solution
	a) 0.33 Faraday	b) 1 Faraday	c) 3 Faraday	d) 1.33 Faraday

Α

56.	The element with highest electrical conductivity is				
	a) Gold	b) silver	c) copper	d) mercury	
57.	-		on at 20°C is 0.0212		
		C	ion at 20°C is 55 ohm. T		
	a) 4.616 cm ⁻¹	b) 1.66 cm ⁻¹	c) 2.173 cm ⁻¹	d) 3.324 cm ⁻¹	
58.	Which is the missin	ng particle in the follow	ving nuclear reaction, a	$_{7}Li + {}_{1}{}^{2}H \rightarrow {}_{3}{}^{8}Li + ?$	
	a)Proton	b) deuteron	c) positron	d) a-particle	
59.	Which of the follow	ving has highest n/p r	atio?		
57.	a) ¹⁶ Ne	b) ¹⁶ O	c) ¹⁶ F	d) ¹⁶ N	
	a) - ine	0)***	c)1	u)	
60.	Which of the following is used as neutron absorber in the nuclear reactor?				
	a) Water	b) deuterium	c) tritium	d) cadmium	
61.	Which of the fol conc.KMnO ₄ ?	lowing alkenes gives	only acetic acid on	oxidation with hot	
	a) Ethylene	b) 1-Butene	c) Propene	d) 2-Butene	
	, ,	,	/ 1	,	
62.	The number of stru	actural isomers of alcol	nols with molecular for	mula C ₄ H ₉ OH is	
	a) 5	b)4	c) 3	d)6	
63.	Lucas tast is used t	a datarmina tha tuna a	£		
05.	a) Alcohols	o determine the type o b) amines	c) acids	d) carbohydrates	
	a) Alcohols	b) animes	c) actus	u) carbonyurates	
64.	Check the incorrec	t statement			
	a) Tartaric acid is p	present in grapes	b) citric acid is a tric	arboxylic acid	
	c) formic acid is pr	esent in insect bites	d) acetic acid is pres	ent in sour milk	
65.	Which of the follow	ving statements is false	about glucose?		
	a) It is a reducing s	0	b) it has a pyranose	form	
	c) it is a disaccharie	0	d) it is a polyalcoho		
	,		· I J		

66.	With which of the following diseases is vitamin K associated?			
	a) Rickets		b) Coagulating prop	erty of blood
	c) Scurvy		d) Sore throat	
67.	Which of the followi	ng is insecticide?		
	a) DDT	b) TNT	c) TNB	d) aspirin
68.	Caprolactum is the s	tarting material for		
	a) Nylon-6	b) terylene	c) nylon-6,10	d) nylon-6,6
69.	$F_2C=CF_2$ is a monon	ner of		
	a) Teflon	b) glyptal	c) nylon-6	d) buna-S
70.	PVC is stronger than	PE due to one of the	following reasons	
	a) Presence of lumps	s of Cl atoms in the sid	e chain	
	b) Belongs to thermo	osetting plastic		

- c) Belongs to thermoplastic
- d) Presence of cross linked structures

If *x* is small that x^3 and higher powers of *x* may be neglected then 71.

$$\frac{(1+x)^{3/2}-(1+\frac{1}{x}x)^3}{(1-x)^{1/2}} \text{ may be approximated as}$$
a) $1 - \frac{3}{8}x^2$ b) $3x + \frac{3}{8}x^2$ c) $-\frac{3}{8}x^2$ d) $\frac{x}{2} - \frac{3}{8}x^2$
72.
If $x = \sum_{n=0}^{\infty} a^n$, $y = \sum_{n=0}^{\infty} b^n$, $z = \sum_{n=0}^{\infty} c^n$
where a,b,c are in AP and $|a| < 1$, $|b| < 1$, $|c| < 1$ then x,y,z are in
a) GP b) AP
c) Arithmetic-Geometric Progression d) HP
73. The angle between the lines $2x=3y=-z$ and $6x=-y=-4z$ is
a) 0° b) 90° c) 45° d) 30°
74. If the plane $2ax-3ay+4az+6=0$ passes through the midpoint of the line joining the centres of the spheres
 $x^2+y^2+z^2+6x-8y-2z=13$ and $x^2+y^2+z^2-10x+4y-2z=8$, then a equals
a) -1 b) 1 c) -2 d) 2
75. Let $\overline{a} = \overline{i} - \overline{k}$, $\overline{b} = x\overline{i} + \overline{j} + (1-x)\overline{k}$, and $\overline{c} = y\overline{i} + x\overline{j} + (1+x-y)\overline{k}$, then $[\overline{a} \ \overline{b} \ \overline{c}]$ depends upon
a) only y b) only x c) both x and y d) neither x nor y

- The value of $\int_{-\pi}^{\pi} \frac{\cos^2 x}{1+a^x} dx$, a > 0 is 76. c) $\frac{\pi}{a}$ b) $\frac{\pi}{2}$ d) 2π a) *a* π
- The normal to the curve $x = a(\cos \theta + \theta \sin \theta)$, $y = a(\sin \theta \theta \cos \theta)$ at any point 77. ' θ ' is such that

then

- a) It passes through the origin
- b) It makes angle $\frac{\pi}{2} + \theta$ with the *x axis*
- c) It passes through $\left(a\frac{\pi}{2}, -a\right)$
- d) It is at a constant distance from the origin

78. The value of $\cot\left(\csc^{-1}\frac{5}{3} + \tan^{-1}\frac{2}{3}\right)$ is a) $\frac{4}{17}$ b) $\frac{5}{17}$ c) $\frac{6}{17}$ d) $\frac{3}{17}$

79. The differential equation of the family of circles with fixed radius 5 units and centre on the line y=2 is a) $(y-2)^2 {v'}^2 = 25 - (y-2)^2$ b) $(x-2)^2 {v'}^2 = 25 - (y-2)^2$

a)
$$(y-2)^2 y = 25 - (y-2)^2$$

b) $(x-2)^2 y = 25 - (y-2)^2$
c) $(x-2)y'^2 = 25 - (y-2)^2$
d) $(y-2)y'^2 = 25 - (y-2)^2$

80. The quadratic equations $x^2 - 6x + a = 0$ and $x^2 - cx + 6 = 0$ have one root in common. The other roots of the first and second equations are integers in ratio 4:3. Then the common root is

a) 3 b) 2 c) 1 d) 4

81. The mean of the numbers a,b,8,5,10 is 6 and the variance is 6.80. Then which one of the following gives possible values of a and b?
a) a=1, b=6 b) a=3, b=4 c) a=0, b=7 d) a=5, b=2

82. Let R={(3,3), (6,6), (9,9), (12,12), (6,12), (3,9), (3,12), (3,6)} be a relation on the set A={3,6,9,12}. The relation is
a) reflexive and transitive only
b) reflexive only
c) an equivalence relation
d) reflexive and symmetric only

83. The solution of the differential equation $\frac{dy}{dx} = \frac{x+y}{x}$ satisfying the condition y(1) = 1 is

a)
$$y = xe^{(x-1)}$$
 b) $y = x \ln x + x$ c) $y = \ln x + x$ d) $y = x \ln x + x^2$

84. If a line makes an angle $\frac{\pi}{4}$ with the positive directions of each of *x*-axis and *y*-axis, then the angle that the line makes with the positive direction of *z* axis is a) $\frac{\pi}{6}$ b) $\frac{\pi}{3}$ c) $\frac{\pi}{4}$ d) $\frac{\pi}{2}$

85. The point diametrically opposite to the point P(1,0) on the circle $x^{2} + y^{2} + 2x + 4y - 3 = 0$ is a) (-3,-4) b) (3,4) c) (3,-4) d) (-3,4)

- 86. If $a^2 + b^2 + c^2 = -2$ and $\mathbf{f}(\mathbf{x}) = \begin{vmatrix} 1 + a^2 x & (1 + b^2) x & (1 + c^2) x \\ (1 + a^2) x & 1 + b^2 x & (1 + c^2) x \\ (1 + a^2) x & (1 + b^2) x & 1 + c^2 x \end{vmatrix}$ then $\mathbf{f}(\mathbf{x})$ is a polynomial of degree a) 1 b) 0 c) 3 d) 2
- 87. The value of $50 C_4 + \sum_{r=1}^{6} 56 r C_3$ is a) 55 C_4 b) 55 C_3 d) 56 C_3 d) 56 C_4

88. Suppose the cubic $x^3 - px + q$ has three district real roots where p>0 and q>0, then which one of the following holds

- a) the cubic has minima at both $\sqrt{p/3}$ and $-\sqrt{p/3}$
- b) the cubic has maxima at both $\sqrt{p/3}$ and $-\sqrt{p/3}$
- c) the cubic has minima at $\sqrt{p/3}$ and maxima at $-\sqrt{p/3}$
- d) the cubic has minima at $-\sqrt{p/3}$ and maxima at $\sqrt{p/3}$

89. The first two terms of a geometric progression add upto 12. The sum of the third and fourth term is 48. If the terms of the geometric progression are alternatively positive and negative then the first term is

a) 12 b) 4 c) -4 d) -12

90. If the straight lines $\frac{x-1}{k} = \frac{y-2}{2} = \frac{z-3}{3}$ and $\frac{x-2}{3} = \frac{y-3}{k} = \frac{z-1}{2}$ intersect at a point then the integer *k* is equal to a) 2 b) -2 c) -5 d) 5

91. The equation of the tangent to the curve $y = x + \frac{4}{x^2}$, that is parallel to *x* axis, is a) y=1 b) y=2 c) y=3 d) y=0

92. If the vectors $\overline{a} = \overline{i} - \overline{j} + 2\overline{k}$, $\overline{b} = \overline{2i} + 4\overline{j} + 2\overline{k}$ and $\overline{c} = \lambda\overline{i} + \overline{j} + \mu\overline{k}$ are mutually orthogonal, then $(\lambda, \mu) =$ a) (2,-3) b) (-2,3) c) (3,-2) d) (-3,2)

93. If $x^m y^n = (x + y)^{m+n}$, then $\frac{dy}{dx}$ is a) $\frac{x+y}{xy}$ b) xy c) $\frac{x}{y}$ d) $\frac{y}{x}$

94. If
$$\cos(\alpha + \beta) = \frac{4}{5}$$
 and $\sin(\alpha - \beta) = \frac{5}{13}$, where $0 \le \alpha, \beta \le \frac{\pi}{4}$, then $\tan 2\alpha =$
a) $\frac{56}{33}$ b) $\frac{19}{12}$ c) $\frac{20}{7}$ d) $\frac{25}{16}$

95.
$$\lim_{n \to \infty} \left[\frac{1}{2} \sec^2 \frac{1}{n^2} + \frac{2}{n^2} \sec^2 \frac{4}{n^2} + \dots \dots \frac{1}{n} \sec^2 1 \right] \text{ equals}$$

a) $\frac{1}{2} \sec 1$ b) $\frac{1}{2} \csc 2 1$ c) $\tan 1$ d) $\frac{1}{2} \tan 1$

96. If, in a frequency distribution, the mean and the median are 21 and 22 respectively, then its mode is approximately

97. Let
$$A = \begin{bmatrix} 5 & 5 \propto & \infty \\ 0 & \propto & 5 \propto \\ 0 & 0 & 5 \end{bmatrix}$$
. If $|A^2|=25$, then $| \propto |$ equals
a) 5^2 b) 1 c) $\frac{1}{5}$ d) 5

98. A pair of dice is thrown independently three times. The probability of getting a score of exactly 9 thrice is

a)
$$\frac{1}{729}$$
 b) $\frac{8}{9}$ c) $\frac{8}{729}$ d) $\frac{8}{243}$

99. For the Hyperbola ^{x²}/_{cos²∝} - ^{y²}/_{sin²∝} = 1, which of the following remains constant when ∝ varies?
a) Eccentricity
b) Directrix
c) Abscissa of vertices
d) Abscissa of foci

100. The sum of the series $\frac{1}{2!} - \frac{1}{3!} + \frac{1}{4!} \dots \dots$ up to infinity is a) e^{-2} b) e^{-1} c) $e^{\frac{-1}{2}}$ d) $e^{\frac{1}{2}}$

101. A value of *c* for which the conclusion of Mean Value Theorem holds for the function $f(x) = \log_e x$ on the interval [1,3] is a) $2 \log_3 e$ b) $\frac{1}{2} \log_e 3$ c) $\log_3 e$ d) $\log_e 3$ 102. If $\overline{a} = \overline{i} + \overline{j} + \overline{k}$, $\overline{b} = \overline{i} - \overline{j} + 2\overline{k}$ and $\overline{c} = x\overline{i} + (x - 2)\overline{j} - \overline{k}$. and the vector \overline{c} lies in the plane of \overline{a} and \overline{b} , then x equals a) 0 b) 1 c) -4 d) -2

103. If z_1 and z_2 are two non-zero complex numbers such that $|z_1 + z_2| = |z_1| + |z_2|$, then arg z_1 - arg z_2 is equal to a) $\frac{\pi}{2}$ b) $-\pi$ c) 0 d) $-\frac{\pi}{2}$

104. If the roots of the equation $x^2 - bx + c = 0$ be two consecutive integers, $b^2 - 4c$ equals a) -2 b) 3 c) 2 d) 1

105. If
$$A^2 - A + I = 0$$
, then the inverse of A isa) $A+I$ b) Ac) A-Id) I-A

Part 4 - Biology

71.	Name the organ that stores surplus red blood cells				
	a) Pancreas	b) Spleen	c) Liver	d) Kidneys	
72.	Which is not a bacter	rial disease affecting a	nimals?		
	a) Anthrax	b) Leptospirosis	c) Histoplasmosis	d) Tuberculosis	
73.	Karyotyping				
	a) Identification of d	ifferent cell lines	b) Chromosome dup	olication	
	c) Arrangement of ch	nromosomes	d) DNA fragmentati	on	
74.	The smallest particle	of a substance that is	capable of independer	nt existence is	
	a) Atom	b) Electron	c) Molecule	d) Proton	
75.	Which of the following statements concerning platelets is INCORRECT. Platelets a) contain DNA				
	b) have little ability to synthesize proteins				
	c) are roughly disk-s	haped			
	d) are between 1/2 a	nd 1/3 the diameter o	f the red cell		
76.	Which of the followi	ng is NOT part of a ne	uron?		
	a) Synapse	b) Axon	c) Nissl bodies	d) Dendrite	
77.	Tissue differentiation	n begins at which stage	e?		
	a) Zygote	b) Blastula	c) Morula	d) Gastrula	
78.	Among these which	one is Organophospho	orus Pesticides?		
	a) Dichloromethane	b) Malathione	c) Chloroform	d) Carbamide	
79.	How many nucleotic	les make up a codon?			
	a) 3	b) 4	c) 6	d) 1	
80.	The purity of an enz	yme at various stages	of purification is best r	neasured by	
	a) Total protein		b) Total enzyme acti	vity	
	c) Specific activity of	the enzyme	d) Percent recovery	of protein	

81.	The movement of water upward in xylem vessels is most directly related to				
	a) Wall pressure		b) Transpiration		
	c) Turgor pressure		d) Cytoplasmic stream	ning	
82.	Which of the followir	ng is NOT a characteris	stic feature of the king	lom	
	plantae?				
	a) They are multicellu	ılar			
	b) They possess bilate	eral symmetry			
	c) They are nonmotile				
	d) There is an alterna	tion of haploid and di	ploid generations		
83.	33. The major component of a plant cell wall is a product formed from the dehyda synthesis of				
	a) Fatty acids		b) Amino acids		
	c) Nucleotides		d) Monosaccharides		
84.	The most important of	ozone depleting factor	in the stratosphere is		
	a) CH ₄	b) CFC	c) N ₂ O	d) CO	
85.	Pesticide with very lo	w biodegradation and	l strong affinity for fat	y tissues are	
	a) Organo phosphate	S	b) Pyrethrodids		
	c) Organochlorides		d) Allerthrin		
86.	AZT (azidothymidine	e) is the drug of choice	for		
	a) Tuberculosis	b) Cholera	c) AIDS	d) SARS	
87.	The phenotypic ratio	of incomplete domina	nce is		
	a) 3:1	b) 1:1	c) 1:2:1	d) 9:3:3:1	
88.	Antigenic determinar	nts of variable regions	are referred as		
	a) Isotype	b) Allotype	c) Idiotype	d) Fc receptors	
89.	One gene one enzyme	e hypothesis was prop	osed by		
	a) Beadle and Tatum	b) Waldeyer	c) Johansen	d) Balbiani	

90.	Which of the following is NOT a mode of genetic exchange within a bacteria population?			in a bacterial
	a) Conjugation		b) Transformation	
	c) Transduction		d) Translation	
91.	Virus reproduces by	<i>,</i>		
	a) Undergo transfor	mation	b) Infect a cell	
	c) Form a latent viru	IS	d) Undergo conjuga	tion
92.	2-phospho glyceric a	acid is converted to ph	osphoenol pyruvic aci	id by
	a) Phosphoglyceric	mutase	b) Phosphoglyceric	kinase
	c) Enolase		d) Pyruvic kinase	
93.	Which among the fo	llowing organisms do	es not cause disease ir	ı plants
	a) Pseudomonas		b) Agrobacterium	
	c) Xanthomonas		d) Clostridium	
94.	Which of the follow:	ing actions is not relate	ed to plant tissue cultu	ure?
	a) Reduction		b) Oxidation	
	c) Active halogen		d) Heavy metal pois	soning
95.	Water potential is ec	qual to		
	а) п + ТР	b) Ψ s + Ψ p	с) п + WP	d) Ψ
96.	In Gram Staining, G	ram's iodine act as		
	a) Counter stain		b) Primary stain	
	c) Secondary stain		d) Mordant	
97.	Lysosomes are reser	voirs of		
	a) Fat		b) RNA	
	c) Secretary glycopre	oteins	d) Hydrolytic enzyr	nes
98.	Which of these auxi	n eradicates weeds		
	a) 2,4 Dichloro phen	oxy acetic acid	b) Indole 3 Acetic ad	cid
	c) Ethylene		d) Abscisic acid	

99.	Prothrombin synthe	sis in liver requires		
	a) Zinc	b) Potassium	c) Calcium	d) Vit K
100.	Find the correctly m	atched pathogenic pro	otozoans with its diseas	ses
	a) Leishmania tropica	– skin leishmaniasis		
	b) Giardia intestinalis	s – amoebiasis		
	c) Leishmania donava	<i>ni</i> - African sleeping si	ckness	
	d) Trypanosoma gaml	biens – kala azar		
101	D 4 1 14 1			
101.	Posterior pituitary h		h) Ourstanin and AC	ד דיד
	a) Vasopressin and (СКП	b) Oxytocin and AC	
	c) TRH and FSH		d) ADH and Oxytoc	111
102.	Which of these is an	essential amino acid?		
	a) Alanine		b) Arginine	
	c) Serine		d) Lysine	
103.		ing is non homopolysa		
	a) Cellulose		b) Starch	
	c) Glycogen		d) Heparin	
104.	Ammonium ion is re	eleased by		
	a) Arginase		b) Glutaminase	
	c) Glutamate dehyd	rogenase	d) Glutamate hydro	lase
105.	Inability to understa	and speak or read is		
100.	a) Dyslexia	ind, speak of read is	b) Ataxia	
	c) Disconnection syr	ndrome	d) Aphasia	
	c) Disconnection syn		u) ripitustu	
106.	Which of the follow:	ing has the highest pH	?	
	a) Gastric juice		b) Saliva	
	c) Bile in the gallbla	dder	d) Pancreatic juice	
107.	Recommended vacc	ines for rabies		
107.	a) BCG	b) HDCV	c) MMR	d) DPT
	4,000	~, 112 C V	C) 111111	

108.	All these conditions are sex chromosome disorders except:							
	a) Super female			b) Down's syndrome				
	c) Turner syndrome		d) Kline filter sy	vndrome				
109.	Nodules with nitrogen-fixing bacteria are present in							
	a) Gram	b) Mustard	c) Wheat	d) Cotton				
110.	Stable conformation means							
	a) Maximum energ	у	b) Binding energy					
	c) Minimum energy	7	d) Interaction er	d) Interaction energy				
111.	Holliday junctions are otherwise called as							
111.	a) Tight Junction	are otherwise called a		b) Can Lunations				
	c) Recons		d) Introns	b) Gap Junctions d) Introns				
	0) 11000110		•)					
112.	The correct structure of a nucleotide is:							
	a) Phosphate-ribose-adenine							
	b) Phospholipid-sugar-base							
	c) Phosphate-sugar-phosphate-sugar							
	d) Adenine-thymin	e or guanine-cytosine	2					
113.	The gas that is most responsible for the greenhouse effect on Earth is							
	a) Oxygen		b) Carbon dioxi	b) Carbon dioxide				
	c) Nitrogen		d) Ozone					
114.	Which material accounts for the greatest percentage of the weight of solid waste?							
	a) Food waste		b) Paper					
	c) Plastic		d) Yard waste					
			a) fafa Haste					
115.	Which is incorrect?							
	a) Stem cells are se	lf-renewable						
	b) Stem cells can pr	roliferate						
	c) Stem cells can differentiate							
	d) Stem cells has indefinite lifespan							

116.	Adenovirus							
	a) is a double stranded DNA virus							
	b) is implicated in acute retinal necrosis							
	c) causes conjunctivitis which responds well to oral acyclovir							
	d) RNA containing virus							
117.	The attachment of the embryo to the uterus is called							
	a) Gestation	b) Implantation						
	c) Fertilisation		d) Menstruation					
118.	Which of the following is a non renewable resource?							
	a) Solar Energy		b) Flora and fauna					
	c) Hydrocarbon fuel		d) Nuclear power					
119.	Birds differ from bats in absence of							
	a) Homeothermy		b) Tracheae					
	c) Four-chambered heart		d) Diaphragm					
120.	Which is the most in	nportant source of foo	d and fodder?					
	a) Algae	b) Lichen	c) Fungi	d) Cereal				

	Answer Key									
Physics		Chemistry		Ma	Math		Biology			
1	с	36	c	71	С	71	b	106	d	
2	С	37	с	72	d	72	с	107	b	
3	а	38	С	73	b	73	с	108	b	
4	d	39	а	74	С	74	С	109	а	
5	b	40	b	75	d	75	a	110	С	
6	d	41	b	76	b	76	a	111	С	
7	С	42	b	77	d	77	d	112	а	
8	b	43	b	78	С	78	d	113	b	
9	d	44	С	79	a	79	а	114	b	
10	С	45	b	80	b	80	С	115	d	
11	а	46	а	81	b	81	b	116	а	
12	d	47	С	82	a	82	b	117	b	
13	С	48	С	83	b	83	d	118	С	
14	a	49	а	84	d	84	b	119	d	
15	С	50	b	85	a	85	c	120	d	
16	С	51	b	86	d	86	С			
17	С	52	b	87	d	87	С			
18	d	53	b	88	С	88	С			
19	а	54	b	89	d	89	а			
20	d	55	С	90	С	90	d			
21	а	56	b	91	С	91	b			
22	d	57	b	92	d	92	С			
23	а	58	а	93	d	93	d			
24	d	59	d	94	а	94	С			
25	b	60	d	95	d	95	b			
26	b	61	d	96	d	96	d			
27	d	62	b	97	С	97	d			
28	b	63	а	98	d	98	а			
29	С	64	d	99	d	99	d			
30	d	65	С	100	b	100	a			
31	b	66	b	101	а	101	a			
32	а	67	а	102	d	102	d			
33	С	68	а	103	С	103	d			
34	С	69	a	104	d	104	с			
35	С	70	а	105	d	105	b			