

# B.Sc. (Hons) 2013-14

## SECTION 1-ENGLISH

1. You must submit your assignment.....next Monday.  
(a) since (b) at (c) until (d) by
2. Complete the sentence with the most analogous option.  
Fragrance is to flower as smoke is to .....  
(a) fire (b) wind  
(c) cloud (d) blaze
3. Choose the antonym of the given word : **Stigma**  
(a) obstinacy (b) honour  
(c) disgrace (d) vision
4. A.....of bees.  
(a) swarm (b) troop (c) herd (d) string
5. The suffix '-tion' when added to the word '**pollute**' makes it a :  
(a) noun (b) verb  
(c) adjective (d) adverb
6. 'Blue blood' refers to :  
(a) acute sickness (b) aristocracy (c) a cloudy day (d) death
7. The plane that we saw was flying to Hawaii. The underlined clause in the above sentence is an example of a/an.....  
(a) Noun clause (b) Adjectival clause  
(c) Adverbial clause (d) Principal clause
8. Let us get .....to some serious talk.  
(a) out (b) away (c) up (d) down
9. This pen is not .....; it must be.....  
(a) mine, his (b) my, him (c) his, him (d) me, his
10. Which of the following pairs is incorrect ?  
(a) Thief : Thieves (b) Lady : Ladies  
(c) Memento : Mementos (d) Loaf : Loafs
11. Who laughs last, laughs.....  
(a) worst (b) best (c) better (d) good
12. The expression to 'get away with' means :  
(a) reach (b) recover from  
(c) not to be caught (d) spread

13. I shall apprise you.....the details.  
 (a) of (b) with (c) at (d) in
14. Choose the correct spelling :  
 (a) providential (b) prevodential  
 (c) providential (d) providential
15. The antonym of 'Predilection' is :  
 (a) fondness (b) liking (c) taste (d) antipathy
16. I have a spare key but.....  
 (a) I cannot lay my hands on it  
 (b) I cannot lay my hands off it  
 (c) I cannot lay my hands from it  
 (d) I cannot lay my hands in it
17. "Black and blue" refers to :  
 (a) the new technology of colours  
 (b) two related colours  
 (c) someone covered with bruises  
 (d) something horrible and magical
18. My father is angry ..... you.  
 (a) on (b) with (c) of (d) by
19. Synonym of 'Esteem' is :  
 (a) Honour (b) Arouse (c) Vital (d) Ideal
20. He was scolded ..... the teacher for failing the test.  
 (a) from (b) with  
 (c) by (d) of
21. The Prime Minister as well as the President .....visiting Aligarh the next month.  
 (a) are (b) was  
 (c) were (d) is
22. I am sure this house is .....  
 (a) their (b) them (c) theirs (d) they
23. It is something.....  
 (a) rear (b) rare (c) reer (d) rarey
24. I think he did it under .....pressure.  
 (a) peer (b) pear (c) pare (d) pair
25. The marriage was put off owing to the sudden death of a close relative. 'Put off' means :  
 (a) cancelled (b) postponed  
 (c) destroyed (d) disturbed

2013-20

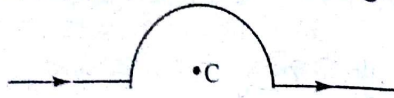
## SECTION II-PHYSICS

26. The radius of a nucleus is proportional to :  
 (a)  $A^{1/3}$  (b)  $A^{2/3}$  (c)  $A$  (d)  $A^2$
27. Which of the following truth tables corresponds to NAND gate?  

A	B	X	A	B	X	A	B	X	A	B	X
0	0	1	0	0	1	0	0	0	0	0	1
1	0	0	1	0	1	1	0	1	1	0	0
0	1	0	0	1	1	0	1	1	0	1	1
1	1	0	1	1	0	1	1	0	1	1	0

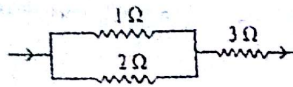
 (a) (b) (c) (d)
28. The sequence of stepwise decays of radioactive nucleus  ${}_{71}^{176}\text{X}$  would finally result a nucleus  $\text{X}_2$  in the process:  
 ${}_{71}^{176}\text{X} \xrightarrow{\alpha} \text{X}_1 \xrightarrow{\beta^-} \text{X}_2$ ;  $\text{X}_2$  is  
 (a)  ${}_{70}^{171}\text{X}$  (b)  ${}_{71}^{171}\text{X}$  (c)  ${}_{71}^{172}\text{X}$  (d)  ${}_{70}^{172}\text{X}$
29. A certain element has a half life of 30 days. Its average life is:  
 (a) 35.3 days (b) 43.2 days (c) 56.6 days (d) 69.2 days
30. Number of photons in 6.63 J of radiation energy of frequency  $10^{12}$  Hz are: (Given,  $h = 6.63 \times 10^{-34}$  J.s)  
 (a)  $10^{12}$  (b)  $10^{19}$  (c)  $10^{22}$  (d)  $10^{34}$
31. Two thin lenses of focal lengths 10 cm each are separated by 5 cm. The focal length of the combination is:  
 (a) 5.81 cm (b) 6.66 cm (c) 9.50 cm (d) 20.22 cm
32. If the two slits in Young's experiment have widths in a ratio 1:16, the ratio of intensities at the maxima and minima in the interference pattern is:  
 (a) 3.6:1 (b) 2.8:1 (c) 4:1 (d) 16:1
33. Which of the following varying fields would generate an electromagnetic waves travelling along z-direction?  
 (a)  $E_x, B_z$  (b)  $E_y, B_z$  (c)  $E_z, B_z$  (d)  $E_x, B_y$
34. The sharpness of the resonance in the series LCR circuit increases with:  
 (a) increasing quality factor (b) decreasing quality factor  
 (c) increasing resistance R (d) decreasing inductance L
35. Energy stored in a coil of self inductance 10 mH carrying a steady current of 2A is:  
 (a) 0.002J (b) 0.02J (c) 0.4J (d) 0.04J

36. A straight wire carrying a current of 6 A is bent into a semi-circular arc of radius 3.00 cm as shown in the figure.



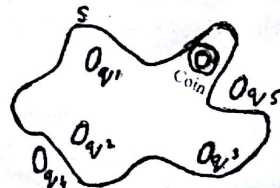
The magnetic field due to the straight segment of the wire at the centre C of the arc is:

- (a)  $4.0 \times 10^{-4} T$  (b)  $4.0 \times 10^{-5} T$  (c)  $8.0 \times 10^{-5} T$  (d) Zero
37. In the circuit shown, power developed across  $1\Omega$ ,  $2\Omega$  and  $3\Omega$  resistances are in the ratio:



- (a) 1:2:3 (b) 2:1:27 (c) 4:2:27 (d) 6:4:9
38. Figure shows five charged lumps of plastic and an electrically neutral coin. The cross-section of a Gaussian surface is indicated.

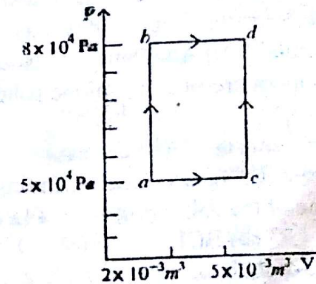
If  $q_1 = q_4 + 3.62 \text{ nC}$   
 $q_2 = q_5 = -7.96 \text{ nC}$   
 $q_3 = -4.51 \text{ nC}$



the electric flux through the surface is: (Given,  $\epsilon_0 = 8.85 \times 10^{-12} C^2/Nm^2$ )

- (a)  $-10^3 Nm^2/C$  (b)  $-10^2 Nm^2/C$   
 (c)  $+10^2 Nm^2/C$  (d)  $+10^3 Nm^2/C$
39. Initially sphere  $S_1$  has a charge of  $-50 e$  and sphere  $S_2$  has a charge of  $+20 e$ . The spheres are made of conducting material and are identical in size. If the spheres then touch, the resulting charge on sphere  $S_1$  is:
- (a)  $-30 e$  (b)  $-15 e$  (c)  $+20 e$  (d)  $+35 e$
40. A standing wave is represented by  $y = 4 \cos(2\pi x/50) \sin(100\pi t)$ , where y is the displacement of the particle. A node will occur at:
- (a) 12.5 cm (b) 25 cm (c) 50 cm (d) none of these

41. Distance between two consecutive nodes is:  
 (a)  $\lambda/4$  (b)  $\lambda/2$  (c)  $\lambda$  (d)  $\lambda/2$
42. Two identical simple pendula are oscillating with amplitudes a and 2a respectively. Ratio of maximum velocities of their bobs is:  
 (a) 1 : 4 (b) 1 : 2 (c) 4 : 1 (d) 2 : 1
43. A flask contains two gases A and B in the ratio of 3 : 1 by mass. The temperature of the mixture is  $30^\circ C$ . The ratio (A : B) of their average kinetic energy per molecule is:  
 (a) 3 : 1 (b) 1 : 3 (c) 9 : 1 (d) 1 : 1
44. A thermodynamic process is shown in the adjacent figure. In process a b, 600 J of heat is added while in the process b d 200 J. The total heat added in the process a c d is:



- (a) 800 J  
 (b) 600 J  
 (c) 560 J  
 (d) 650 J
45. Two wires of the same material have their diameters in the ratio 2 : 1 and lengths in the ratio 1 : 2 respectively. If they are stretched by the same force, their elongation will be in the ratio:  
 (a) 8 : 1 (b) 1 : 8 (c) 2 : 1 (d) 1 : 4
46. A body weighs 63 N on the surface of the earth. The gravitational force on it due to the earth at a height equal to half the radius of the earth is:  
 (a) 63 N (b) 28 N (c) 21 N (d) 31.5 N
47. A 3000 kg motor car can accelerate from rest to a speed of 30 m/sec in 10 seconds. To cause this acceleration, what average power the engine of car must produce? Neglect the losses due to friction:  
 (a) 135 kW (b) 145 kW (c) 155 kW (d) 160 kW

48. A retarding force of 150 N is applied to a body of mass 300 gm moving with a speed of 20 m/sec. How long does the body take to stop ?  
 (a) 0.04 sec (b) 0.4 sec (c) 4 sec (d) 40 sec
49. A bullet is fired horizontally from a gun situated at a height of 40 m above a horizontal plane with a velocity of 200 m/s to hit a target on the horizontal plane. The target is situated at:  
 (a)  $400\sqrt{2}$  m (b)  $600\sqrt{2}$  m (c)  $800\sqrt{2}$  m (d)  $900\sqrt{2}$  m
50. Dimension of surface tension is :  
 (a)  $MT^{-2}$  (b)  $MLT^{-2}$  (c)  $MLT^{-1}$  (d)  $ML^2T^{-2}$

## SECTION III-CHEMISTRY

51. The process in which there is no transfer of heat between system and surroundings is known as:  
 (a) Isothermal (b) Adiabatic (c) Isochoric (d) Isobaric
52. When temperature of a crystalline solid is raised from 0 to 115 K, its entropy:  
 (a) remains constant (b) decreases (c) increases  
 (d) may increase or decrease depending upon nature of solid
53. Which one of the following is not a Lewis acid:  
 (a)  $NH_3$  (b)  $BCl_3$  (c)  $CO^{3+}$  (d)  $Mg^{2+}$
54. The value of ionic product of water at 298 K is:  
 (a)  $1.0 \times 10^{-7} M^2$  (b)  $1.0 \times 10^7 M^2$   
 (c)  $1.0 \times 10^{-14} M^2$  (d)  $1.0 \times 10^{14} M^2$
55. According to Faraday's first law of electrolysis the amount of chemical reaction occurs at any electrode during electrolysis by a current is proportional to:  
 (a) conductivity of electrolyte (b) dilution of electrolyte  
 (c) temperature  
 (d) quantity of electricity passed through electrolyte
56. In a Daniell cell  $Zn(s) + Cu^{2+}(aq) \rightarrow Zn^{2+}(s) + Cu(s)$  the reduction half reaction is:  
 (a)  $Cu^{2+}(aq) + 2e^- \rightarrow Cu(s)$  (b)  $Zn^{2+}(aq) + 2e^- \rightarrow Zn(s)$   
 (c)  $Zn(s) \rightarrow Zn^{2+}(aq) + 2e^-$  (d)  $Cu(s) \rightarrow Cu^{2+}(aq) + 2e^-$
57. For a chemical reaction the half life period ( $t_{1/2}$ ) is independent of initial concentration of reacting species. The order of reaction is:  
 (a) 0 (b) 1 (c) 1.5 (d) 2

Which one of the following is emulsion ?

- (a) paint (b) butter (c) milk (d) cloud

For a orthorhombic crystal system, which is incorrect?

- (a)  $a \neq b \neq c$  (b)  $\alpha = \beta = \gamma = 90^\circ$  (c)  $a = b \neq c$  (d) none

The hybridization of Xe in  $XeF_2$  and  $XeF_4$  are respectively:

- (a)  $sp^3d^2$  and  $dsp^2$  (b)  $sp^3d$  and  $sp^3d^2$   
 (c)  $sp^2$  and  $sp^3d$  (d)  $sp^3d^2$  and  $sp^3d$

The following coordination compounds

$[CO(NH_3)_6]$   $[Cr(CN)_6]$  and  $[Cr(NH_3)_6]$   $[CO(CN)_6]$

exhibit the isomeric relation:

- (a) Linkage isomers (b) Ionisation isomers  
 (c) Coordination isomers (d) Structural isomers

Bauxite is an ore of:

- (a) Cu (b) Al (c) Fe (d) None of the above

The radial part of wave function depends on the quantum numbers:

- (a)  $n, l$  (b)  $n$  only (c)  $l, m_l$  (d)  $l$  only

Which is a good conductor of heat and electricity?

- (a) diamond (b) graphite (c) fullerene (d) none

Which one of the following is metalloide:

- (a) Li (b) Be (c) Xe (d) Te

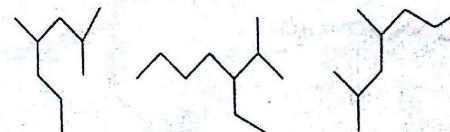
$SF_4$  has:

- (a) Seesaw geometry (b) Tetrahedral geometry  
 (c) Planar geometry (d) Distorted tetrahedral geometry

An octahedral complex is formed when hybrid orbitals of following types are involved :

- (a)  $sp^3$  (b)  $dsp^2$  (c)  $sp^3d^2$  (d)  $sp^3d$

Out of the following which structures represent the same compound:



- (a) A,B (b) B,C (c) A,C (d) A,B,C

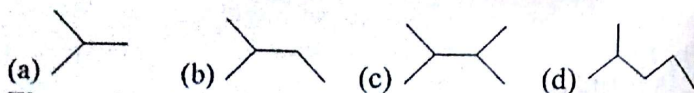
9. Benzene undergoes:

- (a) electrophilic addition (b) electrophilic substitution  
 (c) nucleophilic addition (d) both (a) and (c)

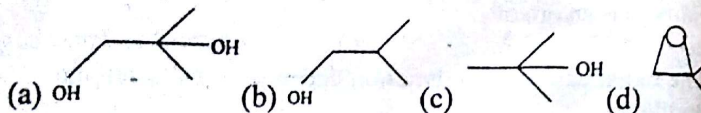
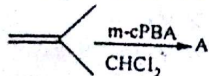
70. A  $\beta$ -hydroxy carbonyl compound is obtained by the action of NaOH on:

- (a)  $(C_6H_5)_3C.CHO$  (b)  $C_6H_5.CHO$   
(c)  $H.CHO$  (d)  $CH_3CHO$

71. Which of the alkane is synthesized from single alkyl halide?



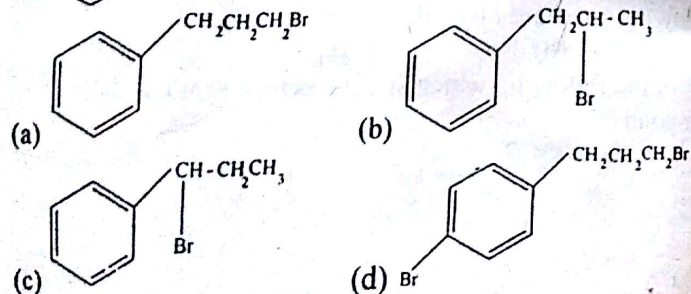
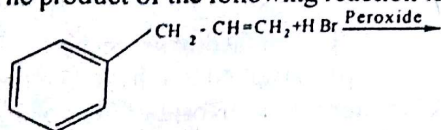
72. The product 'A' of the following reaction is:



73. Which of the following is an organometallic compound?

- (a) Lithium dimethylamide  
(b) Lithium acetate  
(c) Phenyl lithium  
(d) Sodium methoxide

74. The product of the following reaction is:



75. A base-sugar-phosphate unit in nucleic acid is known as:

- (a) phospholide (b) nucleoside  
(c) nucleotide (d) base phosphate

## SECTION IV-MATHEMATICS

76. The points on the curve  $4x^2 + 9y^2 = 1$ , where the tangents are perpendicular to the line  $2y + x = 0$ , are:

- (a)  $(\frac{3}{2\sqrt{10}}, -\frac{1}{3\sqrt{10}})$  and  $(-\frac{3}{2\sqrt{10}}, \frac{1}{3\sqrt{10}})$   
(b)  $(-\frac{3}{2\sqrt{10}}, -\frac{1}{3\sqrt{10}})$  and  $(\frac{3}{2\sqrt{10}}, \frac{1}{3\sqrt{10}})$   
(c)  $(-\frac{3}{2\sqrt{10}}, -\frac{1}{3\sqrt{10}})$  and  $(\frac{3}{2\sqrt{10}}, -\frac{1}{3\sqrt{10}})$   
(d)  $(-\frac{3}{2\sqrt{10}}, \frac{1}{3\sqrt{10}})$  and  $(-\frac{3}{2\sqrt{10}}, \frac{1}{3\sqrt{10}})$

77. Let  $f(x) = \begin{cases} \sin^{-1} |x| \cos \frac{1}{x}, & x \neq 0 \\ 0, & x = 0 \end{cases}$  and  $f(0) = 0$ , then:

- (a) Right hand limit is not equal to left hand limit at  $x=0$   
(b) Limit at  $x=0$  is not equal to the value of the function at  $x=0$   
(c) Function is continuous at  $x=0$   
(d) None of the above

78. If  $f: \mathbb{R} \rightarrow \mathbb{R}$  is defined by  $f(x) = x^2 + 1$ , then the values of  $f^{-1}(17)$  and  $f^{-1}(-3)$  are respectively:

- (a)  $\phi, \{4, -4\}$  (b)  $\{4, -4\}, \phi$  (c)  $\{4, -4\}, \{2, -2\}$  (d)  $\{3, -3\}, \phi$

79. If  $\begin{vmatrix} 1 & 3 & 9 \\ 1 & x & x^2 \\ 4 & 6 & 9 \end{vmatrix} = 0$ , then

- (a)  $x = 3$  (b)  $x = 3$  or  $6$   
(c)  $x = 3$  or  $3/2$  (d) none

80. The value of the determinant:

$$\begin{vmatrix} x+1 & x+2 & x+4 \\ x+3 & x+5 & x+8 \\ x+7 & x+10 & x+14 \end{vmatrix}$$
 is:

- (a) -2 (b)  $x^2 + 2$   
(c) 2 (d) none of these

81. If a matrix A is invertible, then inverse of A is :

- (a) always non-singular matrix (b) always singular matrix  
(c) may be non-singular matrix  
(d) non-singular as well as singular matrix

82. The radius of the circular section of the sphere  $|\vec{r}| = 5$  by the plane  $\vec{r} \cdot (\hat{i} + \hat{j} + \hat{k}) = 3\sqrt{3}$  is:

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

83. If  $|\bar{a}| = |\bar{b}| = |\bar{a} + \bar{b}| = 1$ , then  $|\bar{a} - \bar{b}|$  is:  
 (a)  $\sqrt{3}$  (b)  $2 - \sqrt{3}$  (c)  $2 + \sqrt{3}$  (d) 1
84. The constraints  
 $-x_1 + x_2 \leq 1$   
 $-x_1 + 3x_2 \leq 9$   
 $x_1, x_2 \geq 0$  defines on:  
 (a) bounded feasible space  
 (b) unbounded feasible space  
 (c) both bounded and unbounded feasible space  
 (d) none of these
85. Four cards are drawn from a pack of 52 cards. The probability of drawing exactly one pair is:  
 (a) 0.4 (b) 0.5 (c) 0.8 (d) 0.3
86. The regression coefficient of y on x is  $2/5$  and x on y is  $4/3$ . If the acute angle between the regression line is  $\theta$ , then  $\tan \theta$  is equal to:  
 (a)  $1/9$  (b)  $2/9$   
 (c)  $1/18$  (d) none of these
87. A and B throw a dice. The probability that A's throw is not greater than B's is:  
 (a)  $5/12$  (b)  $7/12$  (c)  $1/6$  (d)  $1/2$
88. If  $\frac{\sin(x+y)}{\sin(x-y)} = \frac{a+b}{a-b}$ , then  $\frac{\tan x}{\tan y}$  is equal to:  
 (a)  $\frac{b}{a}$  (b)  $\frac{a}{b}$  (c)  $\frac{a+b}{a-b}$  (d)  $\frac{a-b}{a+b}$
89. In an examination a candidate is required to pass four different subjects. The number of ways he can fail is:  
 (a) 4 (b) 10 (c) 15 (d) 24
90. If  $\cos(\alpha + \beta) = 0$ , then  $\sin(\alpha + 2\beta)$  is equal to:  
 (a)  $-\sin \alpha$  (b)  $\cos \alpha$  (c)  $\sin \beta$  (d)  $\cos \beta$
91. The maximum value of  $\sin \theta \cos \theta$  is:  
 (a) 1 (b)  $\frac{1}{2}$  (c)  $\frac{1}{\sqrt{2}}$  (d)  $\frac{\sqrt{3}}{2}$
92. Let  $A = \{3, 4\}$  and  $X = \{0, 1, 2, 3, 4\}$ . Let  $A'$  denotes the complement of A in X. Then:  
 (a)  $\{0\} \in A'$  (b)  $0 \subseteq A'$  (c)  $\{0\} \subseteq A'$  (d)  $\phi \in A'$

93. In a group of 50 people, 35 speak Hindi, 25 speak both English and Hindi and all the people speak at least one of the two languages. Then:  
 (a) 12 people speak only English and not Hindi  
 (b) 35 people speak English  
 (c) 10 people speak only Hindi and not English  
 (d) All are correct
94. Let A and B be two nonempty subsets of a set X such that A is not a subset of B. Then:  
 (a) A is a subset of complement of B  
 (b) B is a subset of complement of A  
 (c) A and B are disjoint  
 (d) A and complement of B are not disjoint
95. The maximum distance of the point P (6,7) from the circle  $x^2 + y^2 + 4x - 2y - 11 = 0$  is:  
 (a) 4 (b) 10 (c) 14 (d) 6
96. If the slope of one of the lines  $ax^2 + 2hxy + by^2 = 0$  be the square of the other, then  $\frac{a+b}{h} + \frac{8h^2}{ab}$  is:  
 (a) 4 (b) 6 (c) 7 (d) 8
97. The distance between two parallel lines is unity. A point P lies between the two lines at a distance k from one of them. The length of a side of an equilateral  $\Delta PQR$ , the vertex Q of which lies on one of the parallel lines and vertex R lies on other line, is:  
 (a)  $\frac{1}{\sqrt{3}} \sqrt{k^2 - k + 1}$   
 (b)  $\frac{2}{\sqrt{3}} \sqrt{k^2 + k + 1}$   
 (c)  $\frac{1}{\sqrt{3}} \sqrt{k^2 + k + 1}$   
 (d)  $\frac{2}{\sqrt{3}} \sqrt{k^2 - k + 1}$
98.  $\int_0^3 [x] dx$  is equal to:  
 (a) 1 (b) (c) 3 (d) 4

99.  $\int \frac{2^x+3^x}{5^x} dx$  is:

- (a)  $\frac{\left(\frac{2}{5}\right)^x}{\log_e \frac{2}{5}} + \frac{\left(\frac{3}{5}\right)^x}{\log_e \frac{3}{5}} + C$  (b)  $\frac{\log_e \left(\frac{2}{5}\right)}{\frac{2}{5}} + \frac{\log_e \left(\frac{3}{5}\right)}{\frac{3}{5}} + C$   
 (c)  $\left(\frac{2}{5}\right)^x \log_e \left(\frac{2}{5}\right) + \left(\frac{3}{5}\right)^x \log_e \left(\frac{3}{5}\right)$  (d) none of the above

100. The area of the region bounded by the curves  $y = x^2 + 2$ ,  $y = x$ ,  $x = 0$  and  $x = 3$  is given by:  
 (a) 21 sq units (b)  $\frac{21}{2}$  sq units (c) 15 sq units (d)  $\frac{15}{2}$  sq units

### SECTION V BIOLOGY

101. Origin of new species in the populations occupying the same geographic area is termed as:

- (a) Sympatric speciation (b) True speciation  
 (c) Autogenous speciation (d) Phyletic speciation

102. Which of the following is not the function of liver in adult human beings?

- (a) Production of bile (b) Haemopoiesis  
 (c) Formation of urea (d) Destruction of dead RBC

103. The first genetically engineered protein hormone produced commercially is:

- (a) Thyroxine (b) Insulin (c) Aldosterone (d) ADH

104. B-cells mature in:

- (a) Thymus (b) Bone marrow (c) Spleen (d) Lymph nodes

105. The type of scales found in sharks are:

- (a) Ganoid (b) Placoid (c) Ctenoid (d) Cycloid

106. Hexagonal mid-dorsal scales are present in:

- (a) Cobra (b) krait (c) Pit viper (d) Pit-less viper

107. The outer layer of blastocyst surrounding the embryonic mass is called:

- (a) Trophoblast (b) Ectoderm (c) Ectoblast (d) Periblast

108. At high altitudes, there is:

- (a) an increase in the number of erythrocytes  
 (b) an increase in the size of erythrocytes  
 (c) decrease in the number of erythrocytes  
 (d) decrease in the number of both erythrocytes and leucocytes

109. *Succus entericus* is the name given to:

- (a) A species of enteric bacteria  
 (b) Vermiform appendix  
 (c) Succession of bacteria in intestine  
 (d) Intestinal juice

110. In birds, males are designated as:

- (a) ZW (b) XX (c) XY (d) ZZ

111. Crossing over takes place during:

- (a) Interphase (b) Prophase-I  
 (c) Prophase-II (d) Anaphase-I

112. Which of the following abbreviations is not related to wild life organizations:

- (a) IUCN (b) WWF (c) CITES (d) IUD<sub>s</sub>

113. *Peripatus* is a connecting link between:

- (a) Annelida and Mollusca  
 (b) Annelida and Arthropoda  
 (c) Protozoa and Porifera  
 (d) Coelenterata and Ctenophora

114. The characteristic smell of the bulb of onions is due to the presence of:

- (a) Sugar stored in the scale leaves  
 (b) Organic compounds of sulphur stored in the scale leaves  
 (c) Bad odours of the soil in which they are cultivated  
 (d) Reserve carbohydrates

115. A free living anaerobic bacterium capable of fixing nitrogen is:

- (a) Azotobacter (b) Rhizobium  
 (c) Clostridium (d) Streptococcus

116. The mechanical support to stem is provided by:

- (a) Spring wood (b) Heart wood  
 (c) Sapwood (d) Autumn wood

117. Energy transfer across trophic level is facilitated to the process of:

- (a) Photosynthesis (b) Competition  
 (c) Predation (d) Symbiosis

118. If temperature around the plant increases by 10°C the rate of transpiration:

- (a) will be doubled (b) will become 3.16 ( $=\sqrt{10}$ ) times  
 (c) will become 10 times (d) will become 5 times

119. Electron Transport System (ETS) is present in:  
 (a) Outer mitochondrial membrane  
 (b) Inner mitochondrial membrane  
 (c) Matrix  
 (d) In between outer and inner mitochondrial membrane
120. Deficiency of molybdenum causes:  
 (a) Wilting (b) Increase in growth  
 (c) Chlorosis (d) Necrosis and molting
121. Which of the following does not occur in cyclic electron transport and photophosphorylation?  
 (a) Photolysis of water (b) O<sub>2</sub> evolution  
 (c) Formation of reduced NADPH (d) All of the above
122. Female heterogamy is observed in:  
 (a) Drosophila (b) Birds (c) Honey bee (d) Grasshopper
123. The VNTR, belongs to a class of satellite DNA referred to as:  
 (a) Mini-satellite (b) Centromere (c) Chromomere (d) T-DNA
124. Dragonflies are used for the biocontrol of:  
 (a) rust fungi (b) TMV (c) trichoderma (d) mosquitoes
125. Increase in concentration of toxicants along successive trophic level is called:  
 (a) Eutrophication (b) Resource degradation  
 (c) Toxication of food chain (d) Biomagnification

### SECTION VI HOME SCIENCE

126. For becoming a lecturer in Home Science, applicants are required to qualify..... for lecturership conducted by University Grant Commission:  
 (a) National Entrance Test  
 (b) National Entrepreneur Test  
 (c) National Eligibility Test  
 (d) National Equality Test
127. The principle of design is:  
 (a) line (b) texture (c) emphasis (d) form
128. Texture of a fabric refers to:  
 (a) Appearance of the fabric (b) Feel of the fabric  
 (c) Both (a) and (b) (d) either (a) or (b)
129. Whooping cough pathogen spreads through:  
 (a) water (b) food (c) air (d) soil

130. Coffee is adulterated with:  
 (a) French beans (b) Chicory  
 (c) Soya beans (d) None of these
131. The knowledge of Home Science has a tremendous practical application in:  
 (a) Birth to old age life  
 (b) Birth to adolescent life  
 (c) Day to day life  
 (d) Infancy to adult life
132. Vertical lines in a design suggest:  
 (a) Life (b) Dignity (c) Activity (d) All of these
133. Primary function of clothing is:  
 (a) Self expression  
 (b) Sense of well-being  
 (c) Self adornment  
 (d) Social status
134. The average growth spurt in girls takes place between  
 (a) 10-12 years (b) 9-13 years (c) 11-14 years (d) 13-16 years
135. A major part of iodine in the human body is present in the:  
 (a) Liver  
 (b) Parathyroid gland  
 (c) Thyroid gland  
 (d) Pancreas
136. 'Energising' and 'Adjusting' are the phases of:  
 (a) Planning (b) Controlling (c) Evaluating (d) None of these
137. The objective of planning and furnishing a house is:  
 (a) proportion (b) balance (c) beauty (d) pattern
138. Ergot seeds are the common adulterants for:  
 (a) Rice (b) Wheat (c) Bajra (d) Maize
139. The number of needles or loop per inch is known as:  
 (a) Wale (b) Course (c) Gauge (d) All of these
140. Integrated Child Development Scheme was launched in:  
 (a) 1985 (b) 1975 (c) 1995 (d) 1965
141. Ability to communicate effectively is an example of:  
 (a) Social skill (b) Manual skill (c) Motor skill (d) Mental skill
142. The contracting family of life cycle is a period of:  
 (a) Vocational adjustment (b) Financial recovery  
 (c) Launching period (d) All of these



143. The change in texture, colour and physical state which occurs when starch is heated in water is called:  
 (a) Coagulation (b) Gel (c) Gelatinization (d) None of these
144. Vat dyes are suitable for:  
 (a) Cellulose fibres (b) Nylon fibres  
 (c) Polyester fibres (d) All of these
145. Difficulty in walking is known as:  
 (a) Anorexia (b) Amnesia (c) Ataxia (d) Aplasia
146. Which income refers to the stream of commodities and facilities which the family enjoys over a given period of time:  
 (a) Money income (b) Real income  
 (c) Psychic income (d) None of these
147. Minimum sustenance level for an individual is termed as:  
 (a) over poverty line (b) below poverty line  
 (c) poverty line (d) none of these
148. Bandhej is a technique of:  
 (a) Tie and dye (b) Batik  
 (c) Block printing (d) All of these
149. Which among the following is the pre-dominating secondary sex characteristic of boys at adolescence?  
 (a) Hips (b) Hair (c) Skin (d) Voice
150. The B-complex vitamin thiamine is also known as:  
 (a) Vit B<sub>1</sub> (b) Vit B<sub>2</sub> (c) Vit B<sub>3</sub> (d) Vit B<sub>5</sub>

### Answers: B.Sc.(Hons) 2013-14 – Series- A

1-d, 2-a, 3-b, 4-a, 5-a, 6-b, 7-b, 8-d, 9-a, 10-d, 11-b, 12-c, 13-a, 14-c, 15-d, 16-a, 17-c, 18-b, 19-a, 20-c, 21-d, 22-c, 23-b, 24-a, 25-b, 26-a, 27-b, 28-d, 29-b, 30-c, 31-b, 32-b, 33-d, 34-a, 35-b, 36-d, 37-c, 38-a, 39-b, 40-a, 41-b, 42-b, 43-d, 44-d, 45-b, 46-b, 47-a, 48-a, 49-a, 50-a, 51-b, 52-c, 53-a, 54-c, 55-d, 56-a, 57-b, 58-c, 59-a, 60-b, 61-c, 62-b, 63-a, 64-b, 65-d, 66-a, 67-c, 68-c, 69-b, 70-d, 71-c, 72-d, 73-c, 74-a, 75-c, 76-a, 77-c, 78-b, 79-c, 80-a, 81-a, 82-d, 83-a, 84-b, 85-d, 86-c, 87-b, 88-b, 89-c, 90-d, 91-b, 92-c, 93-c, 94-d, 95-c, 96-b, 97-d, 98-c, 99-a, 100-b, 101-a, 102-b, 103-b, 104-c, 105-b, 106-b, 107-a, 108-a, 109-d, 110-d, 111-b, 112-d, 113-b, 114-b, 115-c, 116-b, 117-c, 118-a, 119-b, 120-d, 121-d, 122-b, 123-a, 124-d, 125-d, 126-c, 127-c, 128-c, 129-c, 130-b, 131-c, 132-d, 133-b, 134-c, 135-c, 136-b, 137-c, 138-c, 139-c, 140-b, 141-a, 142-d, 143-c, 144-a, 145-c, 146-b, 147-c, 148-a, 149-d, 150-a.