

1. To obtain a p-type germanium semiconductor, it must be doped with  
(a) antimony (b) arsenic (c) indium (d) phosphorus
2. Sound waves do not show the phenomenon of  
(a) refraction (b) diffraction (c) reflection (d) polarisation
3. The magnifying power of a compound microscope is high if  
(a) the objective and the eyepiece has short focal lengths (b) both the objective and the eyepiece have long focal lengths (c) the objective has a short focal length and the eyepiece has long focal length (d) the objective has a long focal length and the eyepiece has short focal length
4. 1 curie is  
(a) dps (b)  $3 \times 10^{10}$  dps (c)  $10^{10}$  dps (d)  $37 \times 10^{10}$  dps
5. To double the covering range of a TV transmitter tower, its height should be made  
(a) 2 times (b) 4 times (c)  $\sqrt{2}$  times (d) 8 times
6. An alternating voltage  $V = V_0 \sin \omega t$  is applied across a circuit. As the power  $P = I_0 \sin \omega t = \frac{P_0}{2}$  flows in it. The power consumed per cycle is  
(a)  $2P_0 Q_0 V_0$  (b)  $0.5 V_0 I_0$  (c)  $0.707 Q_0 V_0$  (d)  $1.414 V_0 I_0$
10. The half-life of a radioactive substance is 10 days. This means that  
(a) the substance completely disintegrates in 20 days (b) the substance completely disintegrates in 40 days (c) 1 part of the mass of the substance will be left at the end of 40 days (d) 78 part of the mass of the substance disintegrates in 30 days
11. A source and an observer are moving towards each other with a speed equal to  $\frac{v}{2}$ , where  $v$  is the speed of sound. The source is emitting sound of frequency  $f$ . The frequency heard by one observer will be  
(a) zero (b)  $\frac{2f}{3}$  (c)  $\frac{4f}{3}$  (d)  $3f$
12. Velocity of sound waves in air is 330 m/s. For a particular sound in air, a path difference of 40 cm is equivalent to phase difference of 1.6 $\pi$ . The frequency of the wave is  
(a) 165 Hz (b) 150 Hz (c) 660 Hz (d) 330 Hz
13. The power factor of the circuit shown in figure is  
(a) 0.2 (b) 0.4 (c) 0.6 (d) 0.8
14. A particle is executing linear simple harmonic motion of amplitude  $A$ . What fraction of the total energy is kinetic when the displacement is half the amplitude  
(a)  $\frac{1}{4}$  (b)  $\frac{1}{2\sqrt{2}}$  (c)  $\frac{1}{2}$  (d)  $\frac{3}{4}$
15. Two simple harmonic motions are represented by  $y_1 = 4 \sin(4\pi t - \frac{\pi}{2})$  and  $y_2 = 3 \cos(4\pi t)$ . The resultant amplitude is  
(a)  $5\sqrt{2}$  (b)  $5$  (c)  $2\sqrt{5}$  (d)  $2\sqrt{13}$
20. The Young's modulus of a wire of length  $L$  and radius  $r$  is  $\frac{m}{\pi r^2}$  newton per square metre. If its length is reduced to  $\frac{L}{2}$  and radius  $\frac{L}{2}$ . Its Young's modulus will be  
(a)  $\frac{Y}{2}$  (b)  $Y$  (c)  $2Y$  (d)  $4Y$
21. A boy of mass  $m$  stands on one end of a wooden plank of length  $L$  and mass  $M$ . The plank is floating on water. If the boy walks from one end of the plank to the other end at a constant speed, the resulting displacement of the plank is given by  
(a)  $\frac{mL}{M+m}$  (b)  $\frac{ML}{M+m}$  (c)  $\frac{mL}{M-m}$  (d)  $\frac{ML}{M-m}$
22. A sphere of solid material of relative density  $\rho$  has a concentric spherical cavity and just sinks in water. If the radius of sphere be  $R$ , then the radius of cavity ( $r$ ) will be related to  $R$  as  
(a)  $r^3 = \frac{\rho}{2} R^3$  (b)  $r^3 = \frac{1}{2} R^3$  (c)  $r^3 = \sqrt{2} R^3$  (d)  $r^3 = \frac{2}{\sqrt{3}} R^3$
23. Average value of kinetic energy and potential energy over entire time period in a SHM is  
(a)  $\frac{1}{2} m \omega^2 A^2$  (b)  $\frac{1}{4} m \omega^2 A^2$  (c)  $\frac{1}{2} m \omega^2 A^2$  (d)  $\frac{1}{4} m \omega^2 A^2$
27. A body starts from rest and moves with a uniform acceleration. The ratio of the distance covered in the  $n$ th second to the distance covered in  $n$  second is  
(a)  $\frac{2}{n^2}$  (b)  $\frac{2}{n}$  (c)  $\frac{2}{n^2}$  (d)  $\frac{2}{n}$
28. Wind blowing from South at 10 m/s but a cyclist it appears to be blowing from the East at 10 m/s. The cyclist has a velocity  
(a)  $10\sqrt{2}$  (b)  $10\sqrt{3}$  (c)  $10\sqrt{5}$  (d)  $10\sqrt{10}$
29. The current  $i$  and voltage  $V$  graphs for a given metallic wire at two different temperatures  $T_1$  and  $T_2$  are shown in the figure. It is concluded that  
(a)  $T_2 > T_1$  (b)  $T_2 < T_1$  (c)  $T_2 = T_1$  (d)  $T_2 = 2T_1$
30. The internal resistance of primary cell is 4  $\Omega$ . It generates a current of 0.2 A in an external resistance of 21  $\Omega$ . The rate at which chemical energy is consumed is providing the current is  
(a) 0.42 J/s (b) 0.24 J/s (c) 5 J/s (d) J/s
31. There are four point charges  $+q, -q, +q$  and  $-q$  are placed at the corners A, B, C, and D respectively of a square of side  $a$ . The potential energy of the system is  $\frac{1}{4\pi\epsilon_0}$  times  
(a)  $\frac{q^2}{a}$  (b)  $\frac{q^2}{a}$  (c)  $\frac{q^2}{a}$  (d)  $\frac{q^2}{a}$
36. The magnetic flux linked with the coil varies with time as  $\phi = 3t^2 + 4t + 9$ . The magnitude of the induced emf of 2s is  
(a) 9 V (b) 16 V (c) 3 V (d) 4 V
37. The force  $F(x)$  is given by expression  $F = A \cos(Bx) + C \sin(Dx)$ , where  $x$  is the displacement and  $t$  is the time. Then dimension of  $\frac{F}{B}$   
(a) velocity [ $L T^{-1}$ ] (b) angular velocity [ $T^{-1}$ ] (c) angular momentum [ $M L^2 T^{-1}$ ] (d) velocity gradient [ $L T^{-1}$ ]
38. The thermo emf of a thermocouple varies with the temperature  $\theta$  of the hot junction as  
$$E = a\theta + b\theta^2$$
 where the ratio  $a/b$  is 700°C. If the cold junction is kept at 0°C, then the neutral temperature is  
(a) 350°C (b) 300°C (c) 1400°C (d) no neutral temperature is possible
39. The wire shown in figure carries a current of 32 A. If  $r = 3.14$  cm, the magnetic field at point P will be  
(a)  $1.6 \times 10^{-4}$  T (b)  $3.2 \times 10^{-4}$  T (c)  $4.8 \times 10^{-4}$  T (d)  $6.4 \times 10^{-4}$  T
40. Silicon, germanium and gallium are semiconductors having four valence  $e^-$ . If their respective band gap energies between conduction and valence band are  $(E_g)_Si, (E_g)_Ge, (E_g)_Ga$ . Then  
(a)  $(E_g)_Si < (E_g)_Ge < (E_g)_Ga$  (b)  $(E_g)_Si < (E_g)_Ga < (E_g)_Ge$  (c)  $(E_g)_Ge < (E_g)_Si < (E_g)_Ga$  (d)  $(E_g)_Si < (E_g)_Ge < (E_g)_Ga$
47. Assertion In case of pure rolling, the force of friction becomes zero.  
Reason The speed at the point of contact is zero.
48. Assertion Heat from the sun reaches the earth by convection.  
Reason Air can be heated only by convection.
49. Assertion A wire carrying an electric current has no electric field around it.  
Reason Ratio of flow of electron's in one direction is equal to the rate of flow of protons in opposite direction.
50. Assertion If an electron and proton enter a perpendicular magnetic field with equal momentum, then radius of curve for electron is more than that of proton.  
Reason Electron has less mass than proton.
51. Assertion The ratio  $\frac{C_p}{C_v}$  is more for helium gas than for hydrogen gas.  
Reason Atomic mass of helium is more than that of hydrogen.
52. Assertion Our ears cannot distinguish two notes, one produced by a violin and other by a guitar, if they have exactly same intensity and same frequency.  
Reason When a musical instrument is played, it produces a fundamental note which is accompanied by a number of overtones/harmonics.
53. Assertion The de-Broglie wavelength of electron has significance for any microscopic and submicroscopic particles.  
Reason de-Broglie wavelength is inversely proportional to the mass of the object its velocity is constant.

## Chemistry

1. Aspirin acts as an analgesic because it  
(a) inhibits the synthesis of prostaglandins which stimulates inflammation of the tissue (b) prevents the release of HCl in the stomach (c) prevents the interaction of histamine with its receptors (d) inhibits activities of enzymes
2. Water is a mixture of two components, a starch soluble component amylose (15-20%) and a water insoluble component amylopectin (80-85%). The aqueous solution of amylose gives a blue colour with iodine solution due to the formation of  
(a) amylose iodide (b) amylose iodate (c) inclusion complex (d) amylose tetraiodide complex
3. What reagent is used in the Hinsberg test of amines?  
(a)  $(C_6H_5)_2SO_2$  and sodium (b)  $C_6H_5SO_2Cl$  and  $NaOH$  (c)  $NaNO_2$  in aq.  $H_2SO_4$  (d)  $CH_3I$  excess followed by  $AgOH$
4. Aldol condensation between which of the following two compounds followed by dehydration gives methyl vinyl ketone?  
(a) Formaldehyde and acetaldehyde (b) Formaldehyde and acetophenone (c) Two molecules of acetone (d) Two molecules of acetylacetyde
5. Grignard reagents and organolithium compounds are added to  $CO_2$  like separately, followed by hydrolysis gives  
(a) ketones and carboxylic acids respectively (b) carboxylic acids and ketones respectively (c) only carboxylic acids (d) only ketones
6. The strongest acid among the following is  
(a) *o*-methoxy phenol (b) *p*-methoxy phenol (c) *m*-methoxy phenol (d) Phenol
7. On commercial scale phenol is obtained from chlorobenzene. The chlorobenzene needed for the purpose is prepared by  
(a) chlorination of benzene (b) chlorination of benzene in presence of  $FeCl_3$  (c) chlorination of benzene in presence of  $AlCl_3$  (d) chlorination of benzene in presence of  $SnCl_4$
13. Which of the following carboxation would have the greatest stability?  
(a)  $CH_3-S^+-CH_3$  (b)  $(CH_3)_2NCH_2^+$  (c)  $CH_3OCH_2^+$  (d)  $FC_2H_2^+$
14. Electron affinity is positive, when  
(a) O changes into  $O^-$  (b)  $O^-$  changes into  $O$  (c) O changes into  $O^+$  (d) electron affinity is always negative
15. Which one of the following pairs represents stereoisomerism?  
(a) Chain isomerism and rotational isomerism (b) Structural isomerism and geometrical isomerism (c) Linkage isomerism and geometrical isomerism (d) Optical isomerism and geometrical isomerism
16. Using the data given below find out the strongest reducing agent.  
 $E^\circ_{Cr^{3+}/Cr^{2+}} = 1.33$  V,  $E^\circ_{Cr^{3+}/Cr} = 1.96$  V  
 $E^\circ_{MnO_4^-/Mn^{2+}} = 1.51$  V,  $E^\circ_{Cr^{3+}/Cr} = -0.74$  V  
(a)  $Cr^{2+}$  (b)  $Mn^{2+}$  (c)  $Cr$  (d)  $Cr^{3+}$
17. Emf of Daniell cell was found using different concentrations of  $Zn^{2+}$  ion and  $Cu^{2+}$  ion. A graph was then plotted between  $E_{cell}$  and  $\log \frac{[Zn^{2+}]}{[Cu^{2+}]}$ . The plot was found to be linear with intercept on  $E_{cell}$  axis equal to 1.10 V.  $E_{cell}$  for  $Zn / Zn^{2+} (0.1 M) || Cu^{2+} (1.01 M) || Cu$  will be  
(a) 1.10 V (b) 1.0725 V (c) 0.93 V (d) 0.078 V
18. Which of the following process is not responsible for the presence of electric charge on the soil particles?  
(a) Electron capture by soil particles (b) Adsorption of ionic species from solution (c) Formation of zeolitic electrical double layer (d) Adsorption of ionic species from solution
19. In the metallurgy of aluminium  
(a)  $Al^{3+}$  is oxidised to Al (s) (b) graphite anode is oxidised to  $CO_2$  (c) monoxide and carbon dioxide (d)  $Al^{3+}$  is reduced to Al (s)
25. Which of the following statements is not correct about order of a reaction?  
(a) The order of a reaction can be a fractional number (b) Order of a reaction is experimentally determined quantity (c) The order of a reaction is always equal to the sum of the stoichiometric coefficients of reactants in the balanced chemical equation for a reaction (d) The order of a reaction is the sum of the powers of molar concentrations of the reactants in the rate law expression
26. Which of the following reagents would not be a good choice for reducing an aryl nitro compound to an amine?  
(a)  $H_2$  excess/Pd (b)  $LiAlH_4$  in ether (c)  $Fe$  and  $HCl$  (d)  $Sn$  and  $HCl$
27. Which is the correct statement about birth control pills?  
(a) Contains progesterone only (b) Contains progesterone and oestrogen (c) Contains a mixture of oestrogen and progesterone derivatives (d) Progesterone enhances ovulation
28.  $-CH_2-C(CH_3)=C(CH_3)-C(CH_3)_2-$  is a polymer having monomer units  
(a)  $CH_2=C(CH_3)-C(CH_3)=C(CH_3)_2$  (b)  $CH_2=C(CH_3)-C(CH_3)=C(CH_3)_2$  (c)  $CH_2=C(CH_3)-C(CH_3)=C(CH_3)_2$  (d)  $CH_2=C(CH_3)-C(CH_3)=C(CH_3)_2$
29. Glucose is a branched chain polymer of  $\alpha$ -D-glucopyranose units in which chain is formed by  $C_1-C_6$  glycosidic linkage whereas branching occurs by the formation of  $C_1-C_6$  glycosidic linkage. Structure of glucose is similar to  
(a) amylose (b) amylopectin (c) cellulose (d) glucose
36. The number of unpaired electrons in a paramagnetic diatomic molecule of an element with atomic number 16 is  
(a) 1 (b) 2 (c) 3 (d) 4
37. How many  $\sigma$  and  $\pi$  bonds are in  $SO_4^{2-}$  ion?  
(a) 4, 2 (b) 4, 3 (c) 4, 2 (d) 3, 3
38. The shape of the orbital with the value of  $l = 2, m = 0$  is  
(a) spherical (b) dumb-bell (c) spherical planar (d) square planar
39. For the reaction, 1 g mole of  $CaCO_3$  is enclosed in 5 L container  
 $CaCO_3(s) \rightleftharpoons CaO(s) + CO_2(g)$   
 $K_p = 1.16$  at 1073 K. How per cent dissociation of  $CaCO_3$  is  
(a) zero (b) 8.56% (c) 65% (d) 100%
40. Ionic product of  $NH_4OH$  is  $2.0 \times 10^{-13}$ . Molar solubility of  $NH_4OH$  in 0.10 M  $NH_4Cl$  will be  
(a)  $1.0 \times 10^{-13}$  M (b)  $1.0 \times 10^{-12}$  M (c)  $4.0 \times 10^{-13}$  M (d)  $8.0 \times 10^{-13}$  M
- Directions (Q. 41 to 80) In the following questions a statement of Assertion is followed by a statement of Reason is given. Choose the correct answer out of the following choice.  
(a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.  
(b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.  
(c) Both Assertion and Reason are false.  
(d) Assertion is true and Reason is false.
41. Assertion Neoprene can be further hardened by heating in presence of sulphur.  
Reason Neoprene contains allylic double bonds which help in introducing sulphur bridges between different polymer chains.
50. Assertion The mobility of sodium ion is lower than that of potassium ion.  
Reason The ionic mobilities depend on the effective radius of the ion.
51. Assertion On adding zinc piece to aqueous  $FeCl_3$  solution, colour changes from deep yellow to light green.  
Reason Aqueous  $FeCl_3$  is acidic and on adding Zn, nascent hydrogen is produced which reduces deep yellow  $FeCl_3$  solution to light green  $FeCl_2$  solution.
52. Assertion  $p$ -chlorobenzoic acid is stronger acid than benzoic acid.  
Reason Chlorine has electron donating resonance (+R) effect.
53. Assertion A free radical is paramagnetic species.  
Reason A free radical is formed in homolytic fission of covalent bond.
54. Assertion Addition of one equivalent of  $HCl$  to 1,3-butadiene at 80°C gives 3-chloro-1-butene as major product.  
Reason 3-buteno-1-butene is a kinetically controlled product.

## Biology

1. Speciation of sympatric species is due to  
(a) geographic isolation (b) reproductive isolation (c) isolation/separation (d) migration
2. The application of synthetic plant hormone like IAA, IBA and NAA are best described as  
(a) prevent early fruit falling and hasten ripening (b) hasten ripening and prevent early fruit falling (c) to produce both seeds less fruits and fruits with seeds (d) to produce larger fruit
5. Who had proposed theory of cohesion and adhesion force?  
(a) Dixon and Joly (1924) (b) Dixon and Berson (1985) (c) Dixon and Joly (1952) (d) Sr Jagdish Chandra Bose (1950)
6. Which one of the following useful organisms is not a part in production of curd/yoghurt?  
(a) *Lactobacillus bulgaricus* (b) *Lactobacillus helveticus* (c) *Streptococcus lactis* (d) *Acetobacter aceti*
7. The drugs, which do not develop physiological dependence is  
(a) sedative and tranquillizers (b) amphetamine (c) cocaine (d) hallucinogens
8. Organogenesis or morphogenesis in tissue culture is controlled/regulated by phytohormones. The credit of this discovery goes to  
(a) Skoog and Miller (1957) (b) Guha and Maheshwari (1964) (c) Calvin and Benson (1894) (d) Haeberl and Wetherill (1964)
9. A man whose father is a colourblind, marry a woman, who is a daughter of colourblind mother. The offspring of this couple will be  
(a) all daughter and sons are colourblind (b) 50% colourblind and 50% normal son (c) 50% normal daughter and colourblind sons (d) colourblind sons and normal daughter
10. In a child of 15 years age, plasma calcium level is diagnosed below optimum level. Which organ is malfunctioning?  
(a) Thyroid gland (b) Parathyroid (c) Liver (d) Posterior lobe of pituitary
11. Which one of the following best describe polygenic inheritance?  
(a) Garden lizard (Crotalus) showing camouflage (b) wheaten showing protective colouration (c) human skin colour (d) *Mimulus lewisii* showing sexual dimorphism
18. Different varieties of Indian mangoes are most popular in Western and some other European countries. The varieties with different flavour, colour, sugar and fleshy content is due to  
(a) genetic diversity (b) species diversity (c) induced mutation (d) hybridisation
19. hnRNA undergoes two additional process. Out of them in one process an unusual nucleotide (methyl GMP) is added to the 5' end of molecule. What would you called this?  
(a) Tailing (b) Splicing (c) Termination (d) Capping
20. Which one exhibits the character of a protozoan during one phase of its life cycle and character of fungi in another phase of its life cycle?  
(a) Water moulds (b) Slime moulds (c) Slime moulds (d) Diatoms
21. Wernicke's syndrome is generally common in less mental activity and dual vision. It is caused by the deficiency of  
(a) riboflavin (b) thiamine (c) pyridoxine (d) retinol
22. Which one of the most water-embryosac in flowering plant?  
(a) Monocotyledonous 8-nucleated and 7 celled (b) Monocotyledonous 7 celled and 7 nucleated (c) Equisetum 8 nucleated and 7 celled (d) Equisetum 8 nucleated and 7 celled
23. Which type of immunoglobulin is/are abundantly found in foetus?  
(a) IgE (b) IgG (c) IgM (d) IgD
33. The plants which can withstand with narrow and broad range of temperature tolerance respectively are  
(a) mesothermal and stenothermal (b) arid and mesic stenothermal (c) xerophilous and mesophilous (d) xerophilous and mesothermal
34. Desert can be converted into a lush green land by planting  
(a) mesophilous plant (b) xerophilous plant (c) mesophilous plant (d) psammophytes
35. Which one is a source of commercially important product *Syzygium aromaticum*?  
(a) *Vanilla* (b) *Albizia* (c) *Pinus* (d) *Trillium*
36. When a fern plant is developed from its prothallus without fertilisation? This phenomenon is an example of  
(a) parthenocarpy (b) apogamy (c) asexual reproduction (d) vegetative propagation
37. Brunner's gland are characteristic feature of  
(a) *Salmonella* (b) *Escherichia coli* (c) *Quercus* (d) *Lundbergia* of stomach
38. Which one of the following represents a heteroecious parasitic relationship?  
(a)  $\frac{3}{4} C_2H_6 + \frac{3}{4} O_2 \rightarrow \frac{3}{4} CO_2 + \frac{3}{4} H_2O$  (b)  $\frac{3}{4} C_2H_6 + \frac{3}{4} O_2 \rightarrow \frac{3}{4} CO_2 + \frac{3}{4} H_2O$  (c)  $\frac{3}{4} C_2H_6 + \frac{3}{4} O_2 \rightarrow \frac{3}{4} CO_2 + \frac{3}{4} H_2O$  (d)  $\frac{3}{4} C_2H_6 + \frac{3}{4} O_2 \rightarrow \frac{3}{4} CO_2 + \frac{3}{4} H_2O$
39. Pullorum disease in fowls is caused by  
(a) *Salmonella* (b) *Coliform* (c) *Hemophilus* (d) *Mycobacterium*
40. Green muffer play a important role against  
(a) insect pollution (b) radioactive pollution (c) air pollution (d) noise pollution
47. Assertion Radial vascular bundle is the characteristic of majority of the roots including dicots and monocots.  
Reason Monocot stem is characterised by collateral open vascular bundle.
48. Assertion Due to excessive use of fertilizer and pesticides the available capillary water turns to hypotonic in relation to cell sap.  
Reason The water molecule as a result diffuse out of the cells due to osmosis.
49. Assertion Amphibian heart consist of two auricle and one ventricle.  
Reason The deoxygenated blood is returned to heart through sinus venosus.
50. Assertion Humans are considered advanced from all its primates relatives because of the larger cranial capacity and high intelligence.  
Reason A lumber curve is present in man which is absent in apes.
51. Assertion Chromosomes are divided into heterochromatin and euchromatin part.  
Reason Heterochromatin are those regions of chromosome that remain condensed during interphase and rest of the non-condensed chromosome are called euchromatin.
52. Assertion Tongue is a gustatoreceptor.  
Reason Receptors for gustation are located in taste bud.
53. Assertion Aflatoxin are commercially produced by a species of aspergillus.  
Reason These toxin are useful to mankind.

## General Knowledge & Aptitude

1. The most appropriate measure of a country's economic growth is its  
(a) Gross Domestic Product (GDP) (b) Net Domestic Product (NDP) (c) Net National Product (NNP) (d) Per Capita Product (PCP)
2. Who amongst the following is the regulator of Insurance sector in India?  
(a) IRDA (b) SEBI (c) AMFI (d) RBI
3. The Dakshinamurti idol of Shiva depicts him in which form?  
(a) Teacher (b) Dancing (c) Reclining (d) Meditating
4. The only Muslim woman to sit on the throne of Delhi was  
(a) Razia Sultan (b) Mumtaz Mahal (c) Hamza Begum (d) Nurjahan
5. Which of the following organisations makes 'Doing Business Report' every year?  
(a) WTO (b) IMF (c) UNCTAD (d) ILO
6. Mahatma Gandhi returned to India, leaving South Africa forever in  
(a) 1915 (b) 1919 (c) 1914 (d) 1916
7. Which one of the following is not a constituent of body?  
(a) Union Public Service Commission (b) State Public Service Commission (c) Finance Commission (d) Planning Commission
8. Article 340 of the Indian Constitution deals with  
(a) Backward Commission (b) Forward Classes Commission (c) Election Commission (d) Union Public Service Commission
9. The North-South and East-West corridors of the National Highway Development project meet at  
(a) Kanpur (b) Jhansi (c) Lucknow (d) Varanasi
10. How many languages are there in the Eighth Schedule of the Constitution of India?  
(a) 22 (b) 16 (c) 18 (d) 20
11. Which of the following longitudes is known as Standard Meridian in India?  
(a) 87° 30' E (b) 85° 30' E (c) 84° 30' E (d) 82° 30' E
12. Joint Meeting of both Houses of Parliament is chaired by  
(a) Speaker of Lok Sabha (b) Chairman of Rajya Sabha (c) President of India (d) None of the above
13. A book 'Fault Lines' is written by  
(a) Rajnarain Kapur (b) Subba Rao (c) Venkajalan (d) Manik Singh Ahluwalia
14. Vitamin-K is necessary for  
(a) formation of prothrombin (b) prevention of pernicious anaemia (c) prevention of rickets (d) formation of DNA
15. The study related to the plants being used as vegetable is called  
(a) Floriculture (b) Pomology (c) Horticulture (d) Olericulture
16. A parallel port is most often used by a  
(a) mouse (b) monitor (c) printer (d) external storage device