Name----------------   Roll N0.---------- Sig. of Invigilator--------------

New Standard Public School, Raebareli
Half Yearly Examination-2015-16
Subject- Maths (First Paper)

Time: 3Hrs.   Class- XIIE   M.M:- 40

Note:- All questions are compulsory.

Q.1- Attempt any four parts in which part (e) is compulsory.. (Each 1mark)

(a) If $x = \{1, 2, 3, 4, 5\}, y = \{1, 3, 5, 7, 9\}$ then find the value of $(x-y)$ $(y-x)$.

(b) In $\triangle ABC$ prove that: $(b + c)\cos A + (c + a)\cos B + (a + b)\cos c = (a + b + c)$.

(c) Find the value of $\cos^{-1}\left(\dfrac{-1}{2}\right)$

(d) Find the modulus of $1 + \sqrt{3}\,i$.

(e) If in a set A, R is a transitive relation then prove that R^{-1} is also transitive relation.

Q.2- Attempt any four parts :- (Each carry 1.5 marks)

(a) Find the probability of having 53 sundays in a leap year.

(b) Solve the given equations by cramer rule

$x + 2y = 4$

$x - y = 1$

(c) Find $A = [a_{ij}]_{2\times3}$ where $a_{ij} = 2i - 3j$.

(d) Find third term from last in the expansion of $(1 - 3x)^{10}$.

(e) Find the value of r if $15_{P_r} = 2730$.

Q.3- Attempt any four parts:- (Each 1.5 mark)

(a) Which term of the sequence 4, 9, 14, 19---------is 104.

(b) Solve the in equation $-3x + 12 < 0$.

(c) Solve the equation by factor method: $x^2 - 4x + 13 = 0$

(d) Write the negation of the following statements

Chennai is the capital of Tamil Nadu.

(e) Find the sum of n terms of the series: 5 + 55 + 555 + ----------,

Q.4- Attempt any three parts:- (Each 2.5 marks)

(a) Find the square root of $7 + 24\,i$.

(b) If a^2, b^2, c^2 are in A. P. then prove that cot A, cot B, cot C are also in A. P.

(c) Solve the in equation $\dfrac{x+3}{x-2} \geq 2$.

(d) If C_0, C_1, C_2 ---------C_n are the coefficients in the expansion of $(1+x)^n$ then prove that $C_1 + 2C_2 + 3C_3 + -------n C_n = n.2^{n-1}$.

Q.5- Attempt any three parts:- (Each 2.5 marks)

(a) Prove that: $\dfrac{4}{7} - \dfrac{5}{7^2} + \dfrac{4}{7^3} - \dfrac{5}{7^4} + \dfrac{4}{7^5} - \dfrac{5}{7^6} + ------ = \dfrac{23}{48}$

(b) Solve the equation: $\sin^{-1}\left(\dfrac{5}{x}\right) + \sin^{-1}\left(\dfrac{12}{x}\right) = \dfrac{\pi}{2}$

(c) Solve the equation: $\sqrt{3}\sin\theta - \cos\theta = \sqrt{2}$

(d) If A and B are two sets then prove that: $(A \cup B)^{I} = A^{I} \cap B^{I}$.

Q.6- Attempt any one part:- (Each 3 marks)

(a) Let N be the set of positive integers. Define a relation R on N × N such that (a, b) R (c, d) $\Leftrightarrow$ a + d = b + c, (a, b), (c, d) $\in$ N×N. then prove that R is an equivalence relation.

(b) Prove that:

$$\begin{vmatrix} a + b + 2c & a & b \\ c & b + c + 2a & b \\ c & a & c + a + 2b \end{vmatrix} = 2(a + b + c)^3.$$

Q.7- Attempt any one part:- (Each carry 3 marks)

(a) Solve the following linear equations by matrix method:

$2x + y + z = 1$

$x - 2y - 3z = 1$

$3x + 2y + 4z = 5$

(b) How many different permutations can be formed from the four letters of the word "CALCUTTA."

Q.8- Attempt any one part:- (Each carry 3marks)

(a) Using principle of mathematical induction, prove that $x^n - y^n$, is divisible by $(x - y)$ $\forall$ n $\in$ N.

(b) Find the mean and standard deviation of the following using shortcut method:

Xi"	60	61	62	63	64	65	66	67	68
fi"	2	1	12	29	25	12	10	4	5

New Standard Public School, Raebareli
Half Yearly Examination-2015-16
Subject-Maths(Second Paper)

Time: 3Hrs.   **Class-XIIE**   **M.M:-40**

Note:- All questions are compulsory.

Q.1- Attempt any four parts is which part(e) is compulsory.

(Each 1 mark)

(a) Find the value of $\lim\limits_{x \to 0} \dfrac{Sin\ ax}{Sin\ bx}$

(b) If $y = \log_e x^x$, find $\dfrac{dy}{dx}$

(c) Find the centre and radius of the circle $3x^2 + 3y^2 - 6x + 5y - 8 = 0$.

(d) If $\vec{a} = \hat{i} + 2\hat{j} + 3\hat{k}$ and $\vec{b} = 3\hat{i} + 2\hat{j} + \hat{k}$, find $\vec{a} \cdot \vec{b}$.

(e) Find the value of $\dfrac{Cos2x}{cos\ x}$ dx.

Q.2- Attempt any four parts:-   (Each 1.5marks)

(a) If $x = at^2$, $y = 2at$, then find the value of $\dfrac{dy}{dx}$.

(b) Find the equation of the tangent to the ellipse $\dfrac{x^2}{8} + \dfrac{y^2}{2} = 1$ at the point (2, 1).

(c) Find the maximum and minimum value of $x^3 - 2x^2 + x + 6$.

(d) Evaluate: $\dfrac{Cos\ \sqrt{x}}{\sqrt{x}}$ dx.

(e) Find value of $\int_0^{/4} \tan x. \sec x\ dx$.

Q.3- Attempt any four parts:-   (Each 1.5 marks)

(a) Find the differential equation of $y = A \cos x + B \sin x$.

(b) Prove that the line joining points (2,–3) and (–5, 1) is perpendicular to the line joining points (4, 5) and (0, –2).

(c) Find the focus and directrix of parabola $y^2 = -8x$.

(d) Prove that points (2, 3, 4), (–1, 2, –3) and (–4, 1, –10) are collinear.

(e) If $\vec{a} = 3\hat{i} - 2\hat{j} + \hat{k}$, $\vec{b} = 2\hat{i} + 3\hat{j} + 5\hat{k}$, then find value of $\vec{a} \times \vec{b}$.

Q.4- Attempt any three parts:-   (Each 2.5 marks)

(a) Evaluate: $\dfrac{x\ \tan^{-1}x}{(1 + x^2)^{3/2}}$ dx.

(b) Prove that the curves $x^2 - y^2 = 16$ and $xy = 15$ intersect each other at right angle.

(c) Show that $(x) = \begin{cases} x^2 \text{ if } x \neq 1 \\ 2 \text{ if } x = 1 \end{cases}$ is discontinuous at x = 1.

(d) Find the equation to the circle through the points (1, –2) and (4, –3) and having its centre on the line 3x + 4y = 5.

Q.5- Attempt any three parts:-   (Each 2.5marks)

(a) Find the equation to the hyperbola whose focus is(1, 1), directrix is 2x + y =1 and eccentricity is $\sqrt{3}$.

(b) In ABC, D is mid point of BC. Prove that $\overrightarrow{AB} + \overrightarrow{AC} = 2\overrightarrow{AD}$.

(c) Find the equation of a straight line parallel to the vector $9\hat{i} + 21\hat{j} - 6\hat{k}$ and passes through the point $4\hat{i} - 2\hat{j} + 6\hat{k}$.

(d) Find the value of $\dfrac{1}{5 + 4\cos x}$ dx.

Q.6- Attempt any one part:-   (Each 3 marks)

(a) Prove that: $\int_0^{/2} \log \sin x\ dx = -\dfrac{}{2} \log 2$.

(b) Show that the function $x^2 \log \dfrac{1}{x}$ is maximum at x = $\dfrac{1}{e}$

Q.7- Attempt any one part   (Each 3 marks)

(a) Find the equation of the plane passing through point $(\hat{i} + 2\hat{j} - \hat{k})$ and the line of intersection of the planes $\vec{r} \cdot (3\hat{i} - \hat{j} + \hat{k}) = 1$ and $\vec{r} \cdot (\hat{i} + 4\hat{j} - 2\hat{k}) = 0$

(b) Find the area of the region bounded by the parabolas $y^2 = 4ax$ and $x^2 = 4$ by.

Q.8- Attempt any one part-   (Each 3 marks)

(a) Solve the differential equation $(3x^2 y + 10 y) dy + x\ dx = 0$.

(b) Solve the following linear programming problem by graphical method: Under the following constraints find the maximum value of $Z = 4x + y$:
$x + y \leq 50, 3x + y \leq 90, x \geq 0, y \geq 0$.

Note: All the question are compulsory.

Q.1- Choose the correct answer of all parts:- (Each 1 mark)
(a) In the steady state the temperature of a rod:
   (i) increases with time   (ii) decreases with time
   (iii) does not change with time and is same at every point of the rod.
   (iv) does not change with time but is different at different points.
(b) An aeroplane flying in the sky is taking a U- turn in a horizontal plane. While turning so, the aeroplane wings:
   (i) remain horizontal   (ii) become vertical
   (iii)incline in words   (iv) incline out words
(c) The kinetic energy of 1 g-mol of a gas at normal pressure and temperature is E. The kinetic energy of the gas at 273^0C will be:
   (i) $\frac{E}{4}$ (ii) $\frac{E}{2}$ (iii) 2 E   (iv) 4 E
(d) The velocity of a wave is 360 m/sec and frequency is 500 hertz. The path difference between two consecutive points is12 cm. The phase difference between 'them will be:
   (i)) 30^0 (ii) 45^0 (iii) 60^0 (iv) 90^0
(e) Vector $\vec{A} \times \vec{B}$ is:
   (i) Parallel to vector $\vec{A}$ (ii) Parallel to vector $\vec{B}$
   (iii) Parallel to both vectors $\vec{A}$ and $\vec{B}$
   (iv) Perpendicular to both vectors $\vec{A}$ and $\vec{B}$

Q.2- Answer any three parts:- (Each 1 mark)
(a) State the law of equipartition of energy.
(b) Write the main difference in conservative and non-conservative forces.
(c) Define the modulus of rigidity.
(d) What will be percent change in the speed of the transverse wave on a string when tension on the stretched string is increased by 10%.
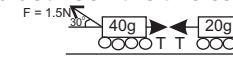
Q.3- Answer any three parts:- (Each 1 mark)
(a) What is meant by centrifugal force? Why it is called pseudo force?
(b) If the orbital speed of a satellite close to earth be increased by 41.4%. Prove that the satellite will leave its orbit and escape to infinity.
(c) At which temp. the readings of celsius and Fahrenheit the thermometers will be the same?
(d) What do you meant by harmonics?

Q.4- Answer any three parts:- (Each 2 marks)
(a) What is meant by free vibrations and resonance?
(b) Air is filled in a scooter tyre at a temp. of 30^0C and at pressure of 3.375 atmosphere. What will be final temp. of the tyre if it burst suddenly? (for air $= 1.5$)

(c) If a wire is stretched by applying an external force, prove it potential energy per unit volume is equal to the $\frac{1}{2}$ × stress ×strain.
(d) A boy pulls a toy having two carriages placed on a friction less table by applying a force of 1.5N at 30^0 in a vertical plane. Calculate (i) the acceleration of the 20-g carriage and (ii) The tension in the string fastened between the two carriages.

Q.5- Answer any three parts:- (Each 2 marks)
(a) By which velocity should a ball be projected upwards from the top of a tower of height 10 m at on angle of 30^0 with horizontal, so that it falls at a distance of 17.3m from the base of the tower. (g = 10m/sec²)
(b) State Steafan's Law of thermal radiation. Establish Newtons law of coolling from this law.
(c) At a above the surface of earth. The gravitional potential is $-5.12×10^7$ J/kg and the acceleration due to the gravity is 6.4m/sec². Assuming the mean radius of the earth to be 6400 km. Calculate the height of that pt. above the earth surface.
(d) On the basis of Kinetic theory of gaxes, write the formula for the pressure of gas and on its basis explain Boyle's law.

Q.6- Answer any three parts:- (Each 2 marks)
(a) State Work- energy theorem and prove it.
(b) Write the formula of first law of thermodynamics. By help of this establish mayer is formula $Cp - Cv = R$
(c) Water is flowing through a horizontal pipe of non- uniform cross-section. The speed of water is 30cm/sec at place where pressure is 10cm water. Calculate the speed of water at other place where the pressure is half of that at the first place.
(d) When an air - columnat 27^0C and tuning fork are sounded togethers, beats per sec are produced. The frequency of the fork is less than that of the air - column beats is heard at -3^0C. Calculate the frequency of the fork.

Q.7- Answer any two parts:- (Each 3 marks)
(a) Derive on expression for the total mechanical energy of a particle executing 5 H.M.
(b) Define surface Tension write its unit. Derive the formula the rised water in a capillary tube.
(c) Two trains are approaching each other with the speed of 30km/h. The frequency of the whistle of one train as heared by a passengor in the other train is 700 Hz. Find the real frequency of whistle and
(ii) the change in frequency of the whistle as heared by this passenger when two trains have crossed each other. (v = 350 m/sec)

New Standard Public School, Raebareli
Half Yearly Examination-2015-16
Subject-Physics (Second Paper)

Time: 3Hrs.   **Class-XIIE**   **M.M:- 35**

Q.1- Choose the correct answer of all parts given below:-

(Each 1 mark)

(a) An electric field can deflect:
(i) X-rays   (ii) neutrons   (iii) - particles (iv) -rays

(b) Two resistances R and 2 R connected in parallel in an electric circuit. The ratio of heat energy produced in R and 2 R is:
(i) 1 : 2   (ii) 2 : 1   (iii) 1 : 4   (iv) 4 : 1

(c) A circular loop of area $1.0 cm^2$ has a current of 10.0 ampere flowing through it. A magnetic field of 0.1 tesla is applied normal to the plane of the loop. Due to the magnetic field the torque acting on the loop will be:
(i) Zero   (ii) 10^{-4}N-m   (iii) 10^{-2}N-m   (iv) 1.0N-m

(d) A magnetic field can be produced:
(i) Only by a moving charge   (ii) Only by changing electric field
(iii) By both methods   (iv) By none of these methods

(e) The work function of a metal is $\frac{hc}{0}$. Light of wavelength   is incident on the surface of the metal. For the emission of electrons from the metal, the condition is :
i)   0   (ii)   2 0   (iii)   0   (iv) $\frac{0}{2}$

Q.2- Answer any three parts:-   **(Each 1 mark)**

(a) The current gain in a transistor connected in common base circuit is 0.98. If the ammeter current is charged by 5.0 mA. Find the change in collector current.

(b) Write the formula for the angle of minimum deviation and angular dispersion for a thin prism.

(c) Show the symbol of a NAND gate and write boolean expression for it.

(d) Explain the meaning of isobaric nuclei with an example.

Q.3- Answer any three parts:-   **(Each 1 mark)**

(a) An electron and a proton are kept in a uniform electric field. Which will have more acceleration and why?

(b) The current I flowing through a conductor and the voltage V applied across its ends is shown in the figure by a graph. What will be the expression for the resistance of the conductor in terms of the angle   ?

(c) A charge q moving with velocity V enters a uniform magnetic field B making an angle of 30^0 with the direction of field. What is the magnitude of the force acting on the charge?

(d) Define the angle of dip. What is its value at the magnetic poles of earth?
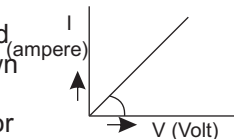
Q.4- Answer any three parts:-   **(Each 2 marks)**

(a) The battery connected in the circuit shown has e.m.f. 12v and negligible internal resistance. Calculate the reading of ammeter A when key K is (i) open (ii) closed.
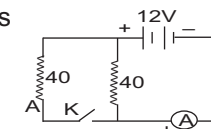
(b) State Lenz's law of electromagnetic induction. On which conservation law. is it based?

(c) What do you mean by band width of a signal? A carrier wave of peak voltage 12V is used to trasmit a massage signal. What should be the peak value of voltage of the modulating signal in order to have a modulation index of 75%.

(d) Two thin parallel slits at a distance d from each other are illuminated by light of wavelength   . Fringes are formed on a screen placed at a distance D from the slits. Obtain an expression for the width of fringes.

Q.5- Answer any three parts:-   **(Each 2 marks)**

(a) A 750Hz, 30 V source is connected across a series circuit having R = 100   , L = 0.1803 H, and e = 100   F. How much time is required to rise the temperature by 15^0 of the resistance if its thermal capacity is $2 J/^0C$.

(b) Two long straight parallel wires each carrying 5.0 A current, are placed at a distance of 2.5cm from each other. Calculate the force acting on 10.0cm length of the wires.

(c) What is displacement current? Write the names of waves of minimum and maximum wavelength in the spectrum of electromagnetic waves.

(d) Explain the phenomenon of photo electric emission on the basis of quantum model and derive photo electric equation.

Q.6- Answer any three parts:-   **(Each 2 marks)**

(a) Explain the principle of a potentiometer. How can the sensitivity of a potentiometer be increased?

(b) The half life of radium is 1600 years. In what time will 25% of a piece of radium will remain undecayed?

(c) What are optical fibers? Explain the transmission of light through optical fibres with the help of ray diagram.

(d) A galvanometer has a resistance of 99   . It gives a full scale deflection with a current of 50 mA. Calculate the shunt resistance required to convert the galvanometer into an ammeter of reading upto 5A, also calculate the resistance of ammeter.

Q.7- Answer any two parts:-   **(Each 3 marks)**

(a) Explain the construction and working of van de Graaff generator with the help of diagram.

(b) A parallel beam of light strikes with a sphere of glass (n = 1.5) of 40.0cm diameter where will it be focused on the other side of the sphere? Draw the ray diagram.

(c) What is a Zener diode? How is it represented? How can a Zener diode is used as a voltage regulator? Explain with the help of circuit diagram.

New Standard Public School, Raebareli
Half Yearly Examination-2015-16
Subject- Chemistry (First Paper)

Time: 3Hrs.   **Class - XIIE**   **M.M:- 35**

Note: (I) All questions are compulsory.

Q.1- Multiple choice questions: **(Each 1mark)**

(a) Maximum number of molecules are:

(i) In 15 liter H_2 gas at S.T.P.   (ii) In 5 liter N_2 gas at S.T.P.

(iii) In 0.5 gm H_2 (iv) In 10 gm O_2 gas

(b) Number of unpaired electrons in Cu^+ (z = 29):

(i) 8   (ii) 4   (iii) 2   (iv) 0

(c) Which have largest size:

(i) N^{-3} (ii) O^{-2} (iii) C^{-4} (iv) F^-

(d) Hybridization of S atom in SO_2 and SO_3 respectively:

(i) Sp, Sp^2 (ii) Sp^2, Sp^2 (iii) Sp^2, Sp^3 (iv) Sp, Sp^3

(e) Which gas have easy liquifaction:

(i) NH_3 (ii) SO_2 (iii) H_2 (iv) CO_2

Q.2- (a) Define critical temperature.   (1)

(b) HF is liquid while HCl gas. Clearify with reason.   (1)

(c) Write short note on Ionisation potential.   (1)

(d) Write four quantum numbers of last electron of vanadium.(z = 23).   (1)

Q.3-(a) Which type of peoples suffer from Silicosis?   (1)

(b) What is Kohlravsch's law?   (1)

(c) Write the name and formula of two ores of Iron.   (1)

(d) Why is liquid hydrogen considered as ideal fuel in rockets?   (1)

Q.4- (a) Write four differences between metallic conductor and electrolytic conductor.   (2)

(b) Explain biological importance of Na and K.   (2)

(c) What are Silicones? 'write its two properties and uses.   (2)

(d) Define transition elements and write any two characteristics.   (2)

Q.5- (a) How will you prepare the following:(Give only Chemical equation)

(i) Cuprous Chloride from Copper sulphate.   (1)

(ii) Boric acid from borax.   (1)

(b) What happens when: (Give only Chemical equation)

(i) CO_2 passes in aqueous solution of Na_2CO_3.   (1)

(ii) Cl_2 passes in hot and concentrated solution of NaOH.   (1)

(c) What is Co-ordination number? Explain with example.   (2)

(d) Describe the effect of Carbon mono-oxide on human health.   (2)

Q.6- Describe industrial method of preparation of NH_3 by haber's process with labelled diagram. Write two main chemical properties   (3)

OR

What are alkaline earth metals? Discuss the position of alkaline earth metals in the periodic- table on the basis of their electronic configurations.

Q.7- How Sulphuric acid is manufactured by contact process? Give the labelled diagram of apparatus used and equations for reactions in evolved.   (3)

OR

(i) Write the IUPAC name of $[Pt(NH_3)_2Cl(NH_2CH_3)]Cl$.   (1)

(ii) What is Co-ordination number of complex $[Fe(CN)_6]^{4-}$.   (1)

(iii) Write oxidation number of S in $H_2S_2O_8$.   (1)

New Standard Public School, Raebareli
Half Yearly Examination-2015-16
Subject- Chemistry (Second Paper)

Time: 3Hrs.   **Class - XIIE**   **M.M:- 35**

Note: All questions are compulsory.

Q.1- There are four options given in each section of this question. Choose correct option and write it in your answer sheet.

(a) Which one of the following has the highest smotic pressure? (1)
- (i) 1M KCl
- (ii) 1M $(NH_4)_3PO_4$
- (iii) 1M $BaCl_2$
- (iv) 1M $C_6H_{12}O_6$

(b) Structure of Sodium Chloride Crystal is: (1)
- (i) Face centred cubic
- (ii) Monoclinic
- (iii) Orthorhombic
- (iv) Tetragonal

(c) Which of the following does not give Iodoform test: (1)
- (i) Ethanol
- (ii) Ethanal
- (iii) Benzophenone
- (iv) Acetophenone

(d) Most stable carbonium ion is: (1)
- (i) Methyl Carbonium ion
- (ii) Primary Carbonium ion
- (iii) Secondary Carbonium ion
- (iv) Tertiary Carbonium ion

(e) Alkaline hydrolysis of oils and fats is called: (1)
- (I) Neutralisation
- (ii) Esterification
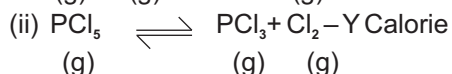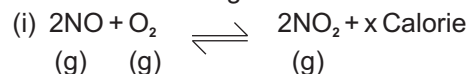- (iii) Polymerisation
- (iv) Saponification

Q.2- (a) Explain heat of combustion with example. (1)
(b) Rivers make delta on meeting with sea, why? Explain it. (1)
(c) What do you mean by negative catalysis? explain with example. (1)
(d) Write Rosenmund's reduction reaction. (1)

Q.3-(a) On opening the bottle of soda water, bubbles come out, why? (1)
(b) Write name and molecular-formula of Vitamin C. (1)
(c) Give an example of Friedel-Crafts reaction. (1)
(d) Write chemical formula of A and B in: (1)

$$\overset{O}{\bigcirc}\ CONH_2 \xrightarrow{P_2O_5} A \xrightarrow[H^+]{H_2O} , B$$
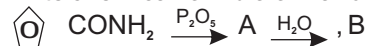
Q.4-(a) Explain effects of temperature and pressure on the equilibrium state of following reactions: (2)

(i) $2NO + O_2 \rightleftharpoons 2NO_2 + x$ Calorie
(g)   (g)   (g)

(ii) $PCl_5 \rightleftharpoons PCl_3 + Cl_2 - Y$ Calorie
(g)   (g)   (g)

(b) Write notes on order of reaction and Heat of reaction. (2)

(c) What is difference between addition polymer and condensation polymer? Explain with example. (2)

(d) Explain Law of mas action. Write value of Kc for reaction: (2)
$$\frac{1}{2}N_2 + \frac{3}{2}H_2 \rightleftharpoons NH_3.$$

Q.5-(a) What happens when? (Give only Chemical equation) (2)
(i) Formaldehyde reacts with ammonia.
(ii) Acetone is heated with conc. H_2SO_4.

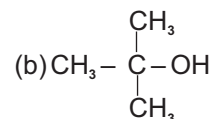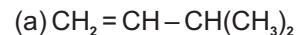(b) How will you obtain? (Give only Chemical reaction) (2)
(i) Benzoic acid from Benzene.
(ii) Picric acid from phenol.

(c) Write short notes on: (2)
(i) Cannizzaro reaction   (ii) Carbylamine reaction

(d) (i) Write the IUPAC names of the following compounds: (1)
(a) $CH_2 = CH - CH(CH_3)_2$

(b) $CH_3 - \overset{\overset{\displaystyle CH_3}{|}}{\underset{\underset{\displaystyle CH_3}{|}}{C}} - OH$

(ii) Define Raoult's Law. (1)

Q.6- An organic compound having molecular weight 59, contains 40.57% carbon, 8.53%, hydrogen 23.65% nitrogen and rest oxygen. This compound reacts with bromine and caustic potash to form a colourless gas having ammonia like odour. This gas gives fumes with HCl. This gas on treatment with nitrous acid gives alcohol and N_2 gas. Give structural formula of organic compound giving reactions involved. (3)

(C= 12, H = 1, O = 16, N = 14)

OR

Complete the following equations: (3)
(i) $(CH_3 COO)_2 Ca \longrightarrow$ ------- + -----------
(ii) $CH_3 COOH + N_3H \xrightarrow{Conc.H_2SO_4}$ --------+$N_2 + CO_2$
(iii) $\underset{Cl}{\overset{\bigcirc}{0}} +$ --------- $\xrightarrow{Conc.H_2SO_4}$ D.D.T + H_2O

Q.7- Describe laboratory method of preparation of diethyl ether with labelled diagram. Why is this method called continuous esterification method? Explain it. (3)

OR

Describe diagramatically laboratory method of preparation of ethyl amine. Also give chemical equations for reactions involved. How will you obtain acetic acid from ethyl amine? (3)

New Standard Public School, Raebareli
Half Yearly Examination-2015-16
Subject- Biology (Second Paper)

Time: 3Hrs.   **Class - XIIE**   M.M:- 35

Note : All questions are compulsory. Draw and well labelled diagram for clarification of your answers:

Q.1- Choose correct option and write in your answer-book.
(a) Who called protoplasm "Physical basis of life: (1)
   (i) Dujaradin   (ii) Huxley   (iii) Robert Hook   (iv) Purkinje
(b) Translocation of food materials takes place: (1)
   (i) By Xylem   (ii) By Phloem   (iii) By Roots   (iv) None
(c) Forest Research Institute is situated in : (1)
   (i) Kolkata   (ii) Dehradun   (iii) Allahabad   (iv) Lucknow
(d) Spadix inflorescence is found in: (1)
   (i) Maize   (ii) Coriandar   (iii) Mulbrey   (iv) Mustard
Q.2- In which sub- stage of Meossis crossing over occur? (1)
Q.3- Write down name of Algae which is source of Iodine. (1)
Q.4- Deficiency of which element causes Dieback disease in plants? (1)
Q.5- What is principle source of energy in ecosystem? (1)
Q.6- Write down name of two plants in which assimilatory roots are found. (1)
Q.7- What are proteins? Write down their functions. (2)
OR
Describe the process of opening and closing of stomata.
Q.8- What are enzymes? Describe the induced fit hypothesis of their mechanism of action. (2)
Q.9- Describe the methods of asexual reproduction in fungi. (2)
Q.10- What are lichens? Write down their economic importance. (2)
OR
What will happen if consumers removed from ecosystem?
Q.11- Write down difference between Heart wood and Sapwood. (2)
OR
A plant cell have 2n chromosome number 28. Write down number of chromosome in its following structure.
(i) In leaf cell   (ii) In Endosperm
(iii) In Pollen grain   (iv) In Microspore Mother Cell
Q.12- Write down difference between osmosis and diffusion. (2)
Q.13- Draw flow chart of Krebs cycle. (2)
OR
Comment on following:
(i) Producer   (ii) Decomposer
Q.14- What are bio fertilizers? What are their advantages? (2)
Q.15- What are meristems? Classify them on the basis of their position in plants. (5)
OR
Draw a neat and well labelled diagram of plant cell and describe the function of any four cell organelles.
Q.16- What is photosynthesis? Describe the light reaction of photosynthesis. (5)
OR
Comment on following:
(i) Water pollution   (ii) False fruit   (iii) Micropropagation

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New Standard Public School, Raebareli
Half Yearly Examination-2015-16
Subject- Biology (First Paper)

Time: 3Hrs.   **Class - XIIE**   M.M:- 35

Note : All questions are compulsory. Draw and well labelled diagram for clarification of your answers:

Q.1- Choose the correct answer of following questions and write in your answer booklet:
(a) Parasite of Malaria is: (1)
   (i) Mosquito   (ii) Plasmodium   (iii) Entamoeba   (iv) Woucheria
(b) Dental formula of a five year child will be: (1)
   (i) $\frac{2123}{2123}$ (ii) $\frac{2102}{2102}$ (iii) $\frac{2012}{2012}$ (iv) $\frac{2321}{2321}$
(c) Full form of IVF is: (1)
   (i) In vitro fertilization   (ii) In vivo fertilization
   (iii) In vitro fertility   (iv) Intra vitro fertilizer
(d) 'Red Data Book' is related with: (1)
   (i) Animals of Red sea   (ii) Endangered species
   (iii) Flowers of Red Colour   (iv) Extinct species
Q.2- Where is the Haversian System found? (1)
Q.3- What is Reverse transcription? (1)
Q.4- What will happen if earth's atmosphere become reducing? (1)
Q.5- What are Restriction Endonucleases? (1)
Q.6- Write down name of Hot spots of bio diversity in India. (1)
Q.7- How microbes are useful in Medicine industry? Explain. (2)
OR
Prove that DNA is a Genetic material.
Q.8- Through light on the economic importance of insects. (2)
Q.9- 'Genetic engineering is very useful for us. Explain. (2)
Q.10- In reference to the Origin on life, describe the Stanley Miller's experiment diagrammatically. (2)
OR
Draw a well labelled diagram of Nephron of Human.
Q.11- What is placenta? Write its function. (2)
OR
What are conditioned Reflex actions? Explain by giving example.
Q.12- Write down four difference between striated and un- striated muscles. (2)
Q.13- What are compound eyes? Describe the compound eyes of Cockroach. (2)
OR
Write down scientific name of following animals:
(i) Starfish   (ii) Human   (iii) Tapeworm   (iv) Dog fish
Q.14- Describe briefly about five kingdom classification of Organisms and write down its demerits. (2)
Q.15- Diagrammatically describe blood circulation in human. (5)
OR
Comments on following: (i) Breathing   (ii) Thyroid gland
Q.16- What do you understand by organic evolution? Compare between Lamarckism and Darwinism. (5)
OR
A normal man, married a woman whose father was colour blind. What is chance of disease in their off springs. Explain with linear diagram.

New Standard Public School, Raebareli
Half Yearly Examination-2015-16
Subject- Computer (Second Paper)

Time: 3Hrs.   Class - XIIE   M.M:- 30

Note:- Answer only 6 questions. Questions number 1 is compulsory:

Q.1- (a) What is Translator Program? Write its parts.   (2)

(b) Make a program with UDF to calculate the Perimeter of Triangle.   (3)

Q.2- (a) Make a algorithm to get area of a rectangle.   (2)

(b) Describe the Development process of programming (PDLC).   (3)

Q.3- (a) Explain Friend function with a program.   (2)

(b) Describe Constructor with a program.   (3)

Q.4- (a) Describe Web Page and Web Site.   (2)

(b) Describe any 6 tags used in HTML.   (3)

Q.5- (a) Describe Class with a program.   (2)

(b) Describe DDA with program.   (3)

Q.6 - (a) What is function Overloading? Explain with a program.   (2)

(b) Describe strcat ( ) function with a program.   (3)

Q.7- (a) Describe Multilevel Inheritance with a program.   (2)

(b) What is 2NF?   (3)

Q.8- Write short notes on any two of following:-   (2½+ 2½=5)

(i) 5 Command of SQL .

(ii) Any three function of Operating System.

(iii) Symbols of Flow Chart.

(iv) Any two Mathematical Functions.

New Standard Public School, Raebareli
Half Yearly Examination-2015-16
Subject- Computer (First Paper)

Time: 3Hrs.   Class - XIIE   M.M:- 30

Note:- Answer only 6 questions. Question number 1 is compulsory:

Q.1- (a) Describe Second Generation of computer.   (2)

(b) $(11111)_2$ + $(1111)_{10}$ = $(?)_2$ (3)

Q.2- (a) Describe e-mail.   (2)

(b) Describe Pen Drive and C.D.   (3)

Q.3- (a) Describe Abacus.   (2)

(b) Describe De Morgan's theorem.   (3)

Q.4- (a) What is FORTRAN?   (2)

(b) Describe If statement with program in C language.   (3)

Q.5- (a) What is register? Explain any two register.   (2)

(b) What is Port? Explain its types.   (3)

Q.6- (a) What is the working of SMPS?   (2)

(b) What is Semi Conductor Memory? Explain its types.   (3)

Q.7- (a) Describe Bubbled OR Gate.   (2)

(b) Describe Twisted Pair Cable with figure.   (3)

Q.8- Write a short note on any 2 topics: (5)

(a) Main Functions of Protocols.

(b) For Loop

(c) ASCII Code

(d) Types of Virus