

Name ----- Roll No-----Sign. of Invigilator-----  
**New Standard Public School, Raebareli**  
**First Unit Test-2017-18**  
**Subject - Computer**  
**Class- XII**

Time: 1 Hr.

M. M.: - 20

Note:- All questions are compulsory.

**Q.1- Give the answer of any nine parts. Part (e) is compulsory. (Each 1mark )**

- (a) What is Simulators?
- (b) What is Kernel?
- (c) Define Virus Scanner and Remover.
- (d) What is Application Software?
- (e) What is Linker?
- (f) Who and When invented Linux?
- (g) Define Algorithm.
- (h) Define Decision Table.
- (i) Define Pseudo Code.
- (j) Write the name of the types of Operating System.

**Q.2- Give the answer of any three parts. (Each 2.5 marks)**

- (a) Describe Booting Process.
- (b) Define Hardware and Software.
- (c) Make a flow chart to find the greater number of the given three numbers.
- (d) Make Algorithm to add two numbers.

**Q.3- Give the answer of any one part. (Each 3.5 marks)**

- (a) Describe Programming and its process steps of Development.
- (b) Describe the functions of Operating System.

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**New Standard Public School, Raebareli**  
**First Unit Test-2017-18**  
**Subject - Biology**  
**Class- XII**

Time: 1 Hr.

M. M.: - 20

Note:- All questions are compulsory, draw a well labelled diagram wherever necessary.

**Q.1- Attempt any nine parts: (Each 1mark )**

- (a) Who discovered incomplete dominance?
- (b) Who rediscovered Mendel's law of heridity?
- (c) Write the genotype of man with blood group A.
- (d) Who coined the term genetics at first?
- (e) What is capillary water?
- (f) What do you mean by replicon?
- (g) On which strand of DNA formation of okazaki segments takes place?
- (h) From where do roots obtain oxygen?
- (i) A person having 44 + xxy chromosomes, by which syndrome he may be affected?
- (j) Write the name of symbiotic bacteria found in leguminous plants.

**Q.2- Attempt any three parts. Part (d) is compulsory. (Each 2.5 marks)**

- (a) What is the importance of water for plants?
- (b) Describe the transformation experiment of Griffith.
- (c) Describe the sex determination in man.
- (d) A man with type 'A' blood marries with a women having type 'B' blood. What will be the expected blood groups of their progeny?

**Q.3- Attempt any one part: (Each 3.5 marks)**

- (a) Describe the Watson and Crick model of DNA with diagram.
- (b) Comment on followings:
  - (i) Law of dominance
  - (ii) Test cross
  - (iii) Active transport

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**Subject - Physics**  
**Class- XII**

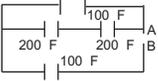
Time: 1 Hr.

M. M.:- 20

**Q.1- Answer any nine parts. Part (x) is compulsory.(Each 1 mark)**

- (i) How many electrons are in 1C charge?
- (ii) If the distance between two point charges is halved. What will be the effect on force acting between them?
- (iii) Define electric flux.
- (iv) Two metallic spheres of radii  $R_1$  and  $R_2$  have equal surface densities of charges. Calculate the ratio of electric fields on the surface of them.
- (v) Define one electron- volt.
- (vi) Potential difference between the two point charges is 60 volt. Calculate work done in carrying a charge  $3 \times 10^{-5}$  coulomb from one point to other point.
- (vii) What will be the net charge on a charged capacitor?
- (viii) Assuming the earth to be a spherical conductor of diameter  $1.28 \times 10^4$  km. Calculate its capacitance.
- (ix) Why two electric lines of force do- not intersect each other.
- (x) Why is it not possible to give charge to a capacitor after a definite limit.

**Q.2- Answer any three parts of the following.- (Each 2.5 marks)**

- (i) State and prove Gauss' theorem in electrostatics.
- (ii) Derive an expression for the electric potential due to a point charge at a distance 'r' from it.
- (iii) Calculate the equivalent capacitance between A and B. 
- (iv) Two large metal plates are close and parallel to each-other, surface density of charge on the plates is  $1.777 \times 10^{-11}$  coulomb / metre<sup>2</sup> of opposite sign. Calculate intensity of electric field between them.

**Q.3- Answer any one part of the following- (Each 3.5marks)**

- (i) Derive an expression for maximum torque acting on an electric dipole placed in a uniform electric field and define the electric dipole moment on the basis of it.
- (ii) What is a capacitor? Establish the expression for the capacitance of a parallel plate capacitor.

Name ----- Roll No-----Sign. of Invigilator-----  
**New Standard Public School, Raebareli**  
**First Unit Test-2017-18**  
**Subject - Chemistry**  
**Class- XII**

Time: 1 Hr.

M. M.:- 20

**Note: All the questions are compulsory.**

**Q.1- Write the answer of any nine sections. Section (x) is compulsory. (Each 1mark)**

- (i) What is rate of reaction?
- (ii) What is rate constant of reaction?
- (iii) Write Arrhenius equation.
- (iv) What do you understand by order of reaction?
- (v) What is specific conductance?
- (vi) What is molar conductivity?
- (vii) Write Faraday's first law of electrolysis.
- (viii) What is electrode potential?
- (ix) Write Nernst equation.
- (x) Reactions having molecularity higher than three are rare, why?

**Q.2- Write the answer of any three sections- (Each 2.5 marks)**

- (i) Explain Kohlrausch law with example.
- (ii) Half- life period of a first order reaction is 60 minutes. In how much time will it go for 90% completion?
- (iii) What is corrosion of metals? Write its mechanism.
- (iv) What is electrochemical series? Write its two applications with example.

**Q.3- Write the answer of any one section- (Each 3.5 marks)**

- (i) Explain collision theory of reaction rate.
- (ii) Describe dry cell with labelled diagram.

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## New Standard Public School, Raebareli

First Unit Test-2017-18

Subject- Maths

Time: 1 Hr.

Class- XII

M.M.:20

Note:- Attempt all the questions.

**Q.1 - Attempt any nine parts in which part (x) is compulsory.**

(Each 1 mark)

(i) Is the matrix  $\begin{bmatrix} 6 & 2 \\ 12 & 4 \end{bmatrix}$  singular?

(ii) If  $A = \begin{bmatrix} 0 & a & b \\ -a & 0 & c \\ -b & -c & 0 \end{bmatrix}$  then find the value of  $\frac{1}{2} (A+A')$

(iii) If  $x \begin{bmatrix} 2 \\ 3 \end{bmatrix} + y \begin{bmatrix} -1 \\ 1 \end{bmatrix} = \begin{bmatrix} 10 \\ 5 \end{bmatrix}$  then find the value of x and y.

(iv) Find the value of determinant  $\begin{vmatrix} 13 & 16 & 19 \\ 14 & 17 & 20 \\ 15 & 18 & 21 \end{vmatrix}$

(v) Solve the following equations by Cramer method

$$3x + 7y = 24$$

$$2x + 5y = 17$$

(vi) Prove that points (8, -1), (4, 7) and (6, 3) are collinear.

(vii) Solve for real number of x:  $-x + 7 > 4x - 3$ .

(viii) Represent the following inequation graphically in two dimensional plane:  $2x + y \leq 6$ .

(ix) Find the solution of inequation  $-3 \left(4 - \frac{7x}{2}\right) \leq 18$

(x) Write an example of skew-symmetric matrix.

**Q.2 - Attempt any three parts-**

(Each 2.5 Marks)

(i) Prove that:  $\begin{vmatrix} a & b & c \\ a^2 & b^2 & c^2 \\ a^3 & b^3 & c^3 \end{vmatrix} = abc(a-b)(b-c)(c-a)$

(ii) Prove that  $x = 1$  is a root of following equation:

$$\begin{vmatrix} x+1 & 3 & 5 \\ 2 & x+2 & 5 \\ 2 & 3 & x+4 \end{vmatrix} = 0$$

(iii) If  $A = \begin{bmatrix} 2 & 3 \\ 0 & 1 \end{bmatrix}$  and  $B = \begin{bmatrix} 3 & 4 \\ 2 & 1 \end{bmatrix}$  then prove that  $(AB)^t = B^t A^t$ .

(iv) Find out the pair of consecutive odd numbers in which both numbers are greater than 10 and their sum is less than 40.

**Q.3-Attempt any one part.**

(Each 3.5 Marks)

(i) Solve the following equations by matrix method:

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

$$x + 2y + z = 1$$

$$x + y + z = 2$$

(ii) If A, B and C are angles of a triangle then prove that:

$$\begin{vmatrix} -1 & \cos C & \cos B \\ \cos C & -1 & \cos A \\ \cos B & \cos A & -1 \end{vmatrix} = 0$$