

**HOLIDAY HOME WORK – 2017**

**CLASS: XII. A AND B.**

**ENGLISH PAPER – 1. ENGLISH LANGUAGE:**

1.) Change the following to Indirect Speech:

- i.) "Please may I come in?" Rita asked the teacher.
- ii.) "Do you eat spicy food, John?" asked Jeremy.
- iii.) "I have played tennis for two years," he said.
- iv.) "When does the school open for the next session?" asked Fatima
- v.) "Ajit fell down the steps and broke his right leg," Raj told his warden.

2.) Fill in the blanks with appropriate words.

- i.) The wrestlers grappled \_\_\_\_\_ each other in the arena.
- ii.) The police broke \_\_\_\_\_ the demonstration.
- iii.) He did not come \_\_\_\_\_ to my expectation.
- iv.) I won't be able to keep \_\_\_\_\_ that speed.
- v.) The marriage party has been put \_\_\_\_\_
- vi.) A committee has been set \_\_\_\_\_ to examine the question.
- vii.) I gave \_\_\_\_\_ all my old books.
- viii.) The horse was walking \_\_\_\_\_ behind its master.
- ix.) He was told to choose \_\_\_\_\_ death and dishonor.
- x.) The rabbit entered \_\_\_\_\_ its burrow.

3.) Join the following sentences to make one sentence without using and, but or so.

- i.) His illness was serious. He stayed in bed for one month.
- ii.) The project must be completed. It does not matter what it costs.
- iii.) I must know the facts. I cannot help you otherwise.
- iv.) They were drenched wet by now. The rain had come down heavily.

4.) Rewrite the following sentences according to the instructions given after each. Make other changes that may be necessary, but do not change the meaning of each sentence.

- i.) John's sister is as economical as John. (Use: more economical.....)
- ii.) He could never have imagined that he would become famous. (Begin: Never.....)
- iii.) "Let us go to the market for shopping," I said to my sister. (Begin: I suggested to my sister.....)
- iv.) They had to spend a night in a hotel because the train was late. Begin: If.....)
- v.) "It is better to reign in heaven than to serve in hell." (Begin: To serve in hell.....)

**ECONOMICS (Chapter 05)**

- Q1. Explain Law of Supply with help of supply curve diagram and Explain Determinants of supply?  
Q2 Explain Exception of the law of supply and supply curves?  
Q3 Difference between Expansion of supply and increase in supply with diagram?  
Q4. Explain Categories (degrees) of Elasticity of supply

**CHEMISTRY:**

- a.) Write the preparation of salicylaldehyde from phenol with all conditions.
- b.) Write the notes of Reimer-Tiemann reaction and Carbylamine reaction.
- c.) Give some reaction on reduction and oxidation.
- d.) Write example of some dehydrating reagent and decarboxylation reagent

**MATHEMATICS** Exercise (3.1)--10 to 13

- a.) Page(162)--(Exercise 3.2)-- 9 to 18      b.) Page(172)--7,8,9,13,14,15,21  
 c.) Page(184)--9 to 19      d.) Page(185)--23,24,25,27,34  
 e.) Page(198)--16 to 20 and 28      f.) Page(228)--3 to 8,14,15,22,24,29,34,35,47  
 g.) Page(260)--25,30,31      h.) Page(281)--10 to 15

**HISTORY**

1.) Answer the following questions-

- a.) Discuss the objectives and the main features of the Foreign Policy of Germany between 1933 and 1938.  
 b.) What is meant by the term, 'appeasement'? Why was this policy adopted?  
 c.) Explain the term, 'Island Hopping'.  
 2.) State the reasons for the defeat of the Axis Power in the Second World War.

**PHYSICS**

Exercise on the chapter Electro-statics, Gauss theorem, Electric Field intensity and Potential, and Capacitor including numerical to be done.

**Additional problems are given for practice:**

- (a) Calculate the potential at a point P due to a charge of  $4 \times 10^{-7} \text{C}$  located 9 cm away.  
 (b) Hence obtain the work done in bringing a charge of  $2 \times 10^{-9} \text{C}$  from infinity to the point P. Does the answer depend on the path along which the charge is brought?
- Two charges  $3 \times 10^{-8} \text{C}$  and  $-2 \times 10^{-8} \text{C}$  are located 15 cm apart. At what point on the line joining the two charges is the electric potential zero? Take the potential at infinity to be zero.
- Four charges are arranged at the corners of a square ABCD of side  $d$ , as shown in Fig. 2.15. (a) Find the work required to put together this arrangement. (b) A charge  $q_0$  is brought to the centre E of the square, the four charges being held fixed at its corners. How much extra work is needed to do this?
- (a) A comb run through one's dry hair attracts small bits of paper. Why? What happens if the hair is wet or if it is a rainy day? (Remember, a paper does not conduct electricity.)  
 (b) Ordinary rubber is an insulator. But special rubber tyres of aircraft are made slightly conducting. Why is this necessary?  
 (c) Vehicles carrying inflammable materials usually have metallic ropes touching the ground during motion. Why?  
 (d) A bird perches on a bare high power line, and nothing happens to the bird. A man standing on the ground touches the same line and gets a fatal shock. Why?
- (a) Determine the electrostatic potential energy of a system consisting of two charges  $7 \text{ C}$  and  $-2 \text{ C}$  (and with no external field) placed at  $(-9 \text{ cm}, 0, 0)$  and  $(9 \text{ cm}, 0, 0)$  respectively.  
 (b) How much work is required to separate the two charges infinitely away from each other?  
 (c) Suppose that the same system of charges is now placed in an external electric field  $E = A(1/r^2)$ ;  $A = 9 \times 10^5 \text{ C m}^{-2}$ . What would the electrostatic energy of the configuration be?
- Two charges  $5 \times 10^{-8} \text{C}$  and  $-3 \times 10^{-8} \text{C}$  are located 16 cm apart. At what point(s) on the line joining the two charges is the electric potential zero? Take the potential at infinity to be zero.

7. A regular hexagon of side 10 cm has a charge  $5 \text{ } \mu\text{C}$  at each of its vertices. Calculate the potential at the centre of the hexagon.
8. Two charges  $2 \text{ } \mu\text{C}$  and  $-2 \text{ } \mu\text{C}$  are placed at points A and B 6 cm apart.
  - (a) Identify an equipotential surface of the system.
  - (b) What is the direction of the electric field at every point on this surface?
9. A spherical conductor of radius 12 cm has a charge of  $1.6 \times 10^{-7} \text{ C}$  distributed uniformly on its surface. What is the electric field
  - (a) inside the sphere
  - (b) just outside the sphere
  - (c) at a point 18 cm from the centre of the sphere?
10. A parallel plate capacitor with air between the plates has a capacitance of 8 pF ( $1 \text{ pF} = 10^{-12} \text{ F}$ ). What will be the capacitance if the distance between the plates is reduced by half, and the space between them is filled with a substance of dielectric constant 6?
11. Three capacitors each of capacitance 9 pF are connected in series.
  - (a) What is the total capacitance of the combination?
  - (b) What is the potential difference across each capacitor if the combination is connected to a 120 V supply?
12. Three capacitors of capacitances 2 pF, 3 pF and 4 pF are connected in parallel.
  - (a) What is the total capacitance of the combination?
  - (b) Determine the charge on each capacitor if the combination is connected to a 100 V supply.

2.8 In a parallel plate capacitor with air between the plates, each plate has an area of  $6 \times 10^{-3} \text{ m}^2$  and the distance between the plates is 3 mm. Calculate the capacitance of the capacitor. If this capacitor is connected to a 100 V supply, what is the charge on each plate of the capacitor?
13. Explain what would happen if in the capacitor given in Exercise 2.8, a 3 mm thick mica sheet (of dielectric constant = 6) were inserted between the plates,
  - (a) while the voltage supply remained connected.
  - (b) after the supply was disconnected.
13. A 12 pF capacitor is connected to a 50 V battery. How much electrostatic energy is stored in the capacitor?
14. A 600 pF capacitor is charged by a 200 V supply. It is then disconnected from the supply and is connected to another uncharged 600 pF capacitor. How much electrostatic energy is lost in the process?
15. A charge of 8 mC is located at the origin. Calculate the work done in taking a small charge of  $-2 \times 10^{-9} \text{ C}$  from a point P (0, 0, 3 cm) to a point Q (0, 4 cm, 0), via a point R (0, 6 cm, 9 cm).
16. A cube of side  $b$  has a charge  $q$  at each of its vertices. Determine the potential and electric field due to this charge array at the centre of the cube.
17. Two tiny spheres carrying charges  $1.5 \text{ } \mu\text{C}$  and  $2.5 \text{ } \mu\text{C}$  are located 30 cm apart. Find the potential and electric field: (a) at the mid-point of the line joining the two charges, and (b) at a point 10 cm from this midpoint in a plane normal to the line and passing through the mid-point.

- 18 A spherical conducting shell of inner radius  $r_1$  and outer radius  $r_2$  has a charge  $Q$ .
- (a) A charge  $q$  is placed at the centre of the shell. What is the surface charge density on the inner and outer surfaces of the shell?
- (b) Is the electric field inside a cavity (with no charge) zero, even if the shell is not spherical, but has any irregular shape? Explain.

**ART**

Paper : any type

Paper size : 35 cm / 25 cm or a3 or a2(half chart paper)

Draw 5 still life study and 5 nature study picture and complete the art work with water colour.

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