

SAINIK SCHOOL BALACHADI
(2017-18)
SUMMER VACATION HOMEWORK
CLASS: XI

ENGLISH

- Q.1** Write a letter to the Editor, 'The Hindu', Chennai about rash and reckless driving by the people in your city, suggesting preventive measures. You are Kamal/Kanwar of 10, Mount Road, Velacherry.
- Q.2** You are Gaurav/Garima, 13 Vaishali, Delhi. Write a letter to the Manager WISDOM PUBLISHER LIMITED, 10, Sector 24, Faridabad applying for the job of Sales Manager. Also give your detailed resume which you would send along with the letter of application.
- Q.3** Balwinder Singh is selling his old study material for AIEEE preparation. Draft an advertisement for him in not more than 50 words.
- Q.4** You have a spacious bungalow in Saket, New Delhi. You want to sell the first floor to a genuine buyer. Write an advertisement giving necessary details in about 50 words.
- Q.5** Read Oscar Wilde's "The Canterville Ghost" and Write a book review
- Q.6** Write a brief character sketch of the following:
(i) Mr.Otis (ii)The Ghost (iii)Virginia

MATHEMATICS

- Write the solution set of the equation $x^2 + x - 2 = 0$ in roster form.
- Write the set $A = \{1, 4, 9, 16, 25, \dots\}$ in set-builder form.
- Match each of the set on the left described in the roster form with the same set on the right described in the set-builder form :
(i) $\{P, R, I, N, C, A, L\}$ (a) $\{x : x \text{ is a positive integer and is a divisor of } 18\}$
(ii) $\{0\}$ (b) $\{x : x \text{ is an integer and } x^2 - 9 = 0\}$
(iii) $\{1, 2, 3, 6, 9, 18\}$ (c) $\{x : x \text{ is an integer and } x + 1 = 1\}$
(iv) $\{3, -3\}$ (d) $\{x : x \text{ is a letter of the word PRINCIPAL}\}$
- Write the following sets in the set-builder form :
(i) $\{3, 6, 9, 12\}$
(ii) $\{2, 4, 8, 16, 32\}$
(iii) $\{5, 25, 125, 625\}$
(iv) $\{2, 4, 6, \dots\}$
(v) $\{1, 4, 9, \dots, 100\}$
- Which of the following are examples of the null set
(i) Set of odd natural numbers divisible by 2
(ii) Set of even prime numbers
(iii) $\{x : x \text{ is a natural numbers, } x < 5 \text{ and } x > 7\}$
(iv) $\{y : y \text{ is a point common to any two parallel lines}\}$

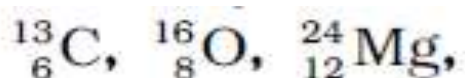
6. Are the following pair of sets equal ? Give reasons.
- (i) $A = \{2, 3\}$, $B = \{x : x \text{ is solution of } x^2 + 5x + 6 = 0\}$
- (ii) $A = \{x : x \text{ is a letter in the word FOLLOW}\}$ $B = \{y : y \text{ is a letter in the word WOLF}\}$
7. Let $A = \{a, e, i, o, u\}$ and $B = \{a, b, c, d\}$. Is A a subset of B ? No. (Why?). Is B a subset of A? No. (Why?)
8. Make correct statements by filling in the symbols \subset or $\not\subset$ in the blank spaces :
- (i) $\{2, 3, 4\} \dots \{1, 2, 3, 4, 5\}$
- (ii) $\{a, b, c\} \dots \{b, c, d\}$
- (iii) $\{x : x \text{ is a student of Class XI of your school}\} \dots \{x : x \text{ student of your school}\}$
- (iv) $\{x : x \text{ is a circle in the plane}\} \dots \{x : x \text{ is a circle in the same plane with radius 1 unit}\}$
- (v) $\{x : x \text{ is a triangle in a plane}\} \dots \{x : x \text{ is a rectangle in the plane}\}$
- (vi) $\{x : x \text{ is an equilateral triangle in a plane}\} \dots \{x : x \text{ is a triangle in the same plane}\}$
- (vii) $\{x : x \text{ is an even natural number}\} \dots \{x : x \text{ is an integer}\}$

PHYSICS

- Q.1 Write the following fundamental forces in nature in detail.
- (a) Gravitational force (b) Weak Nuclear force
- (c) Electrostatic force (d) Strong nuclear force
- Q.2 Write the Greek Alphabet with proper symbol.
- Q.3 Write common SI prefixes and symbols for multiples and submultiples.
- Q.4 Write the dimensional formula for the following Physical quantities.
- (i) Pressure (ii) Impulse (iii) Coefficient of Viscosity
- (iv) Momentum (v) Angular Velocity (vi) Angular Momentum
- (vii) Torque (viii) Wavelength (ix) Kinetic Energy
- (x) Plank's constant (xi) Heat Capacity (xii) Latent Heat
- (xiii) Universal gas constant (xiv) Potential difference (xv) Power of a lens

CHEMISTRY

- What do you mean by significant figures?
- A compound contains 4.07 % hydrogen, 24.27 % carbon and 71.65 % chlorine. Its molar mass is 98.96 g. What are its empirical and molecular formulas?
- How many moles of methane are required to produce 22 g CO₂ (g) after combustion?
- 50.0 kg of N₂ (g) and 10.0 kg of H₂ (g) are mixed to produce NH₃ (g). Calculate the NH₃ (g) formed. Identify the limiting reagent in the production of NH₃ in this situation.
- Calculate the molarity of NaOH in the solution prepared by dissolving its 4 g in enough water to form 250 mL of the solution.
- The number of electrons, protons and neutrons in a species are equal to 18, 16 and 16 respectively. Assign the proper symbol to the species.
- Calculate (a) wavenumber and (b) frequency of yellow radiation having wavelength 5800 Å.
- How many neutrons and protons are there in the following nuclei ?



BIOLOGY

1. PageNo.82 QNo.- 3 ,4,5,6,&10.
2. PageNo.99 QNo.- 4,8,& 11.
3. PageNo.122 QNo.- 4, 5, 8, & 14.
4. PageNo.141 QNo.- 5,8,11&13.
5. PageNo.160 QNo.- 2,&7.
6. PageNo.172 QNo.- 5,7, 8 ,&11.

COMPUTER

1. Define and distinguish between data and information
2. Briefly explain basic structure of a computer.
3. What is Von Neumann architecture.
4. Distinguish between internal and external memory.
5. Define each of the following.
 - a. Nibble
 - b. byte
 - c. kilobyte
 - d. megabyte
 - e. gigabyte
 - f. terabyte
6. What is operating system. Name the types of operating system.
7. What is the difference between program and a process?
8. What are main categories of operating system functions?
9. What is a microcomputer?
10. What is the difference between RAM and ROM?