

## MATHS-

- Let  $A = \{x : x^2 - 5x + 6 = 0, x \in \mathbb{N}\}$ ,  $B = \{2, 4\}$  and  $C = \{4, 5\}$ . Write  $A \cap B$ ,  $A \cap C$ ,  $B \cap C$  and  $A \cap B \cap C$ .
- In a survey it is found that 21 people like product A, 26 people like product B and 29 like product C. If 14 people like product A and B, 15 people like product B and C, 12 people like product C and A, and 8 people like all the three products. Find
  - How many people are surveyed in all?
  - How many like product C only?
- If  $A = [-3, 5)$ ,  $B = (0, 6]$  then find (i)  $A - B$ , (ii)  $A \cap B$ , (iii)  $B - A$  and (iv)  $A \cup B$ .
- The minute hand of a watch is 1.5 cm long. How far does it tip move in 40 minutes?

### Our Institutes

- ⇒ **NEW STANDARD PUBLIC SCHOOL SENIOR SECONDARY SCHOOL**  
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- ⇒ **NEW STANDARD BALIKA VIDYA MANDIR**  
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**Note: Admission open for B.A. and B.Sc. for 2023-24**

*Illuminating Global Education Through Indian Values*

**NEW STANDARD GROUP OF INSTITUTES**



**HOME ASSIGNMENT 2023**



Name.....

Class -11(UP & CBSE) Sec. ....

Branch.....

**Note:1- All the written work is to be done in the fair note book.**

**2- Prepare in all subject taught topics for test just on reopening of the school.**

हिन्दी— (CBSE)

1. 'गर्मियों में वाटर पार्क का परिदृश्य' विषय पर 200 शब्दों में फीचर लिखिए।
2. 'भारतीय गायिकाओं में बेजोड़ लता मंगेशकर' पाठ को पढ़कर उससे सम्बन्धित 15 प्रश्नों को स्वतः बनाकर उसके लिखिए। (प्रत्येक प्रश्न का उत्तर एक पंक्ति में)
3. जन संचार से सम्बन्धित प्रश्नों को कंठस्थ कीजिए। (लिखित कार्य 140 पेज की कॉपी पर)

हिन्दी— (UP BOARD)

1. हिन्दी व्याकरण— (पत्र, संधि, विपरीतार्थक शब्द, शब्द युग्म, अनेकार्थी शब्द) लिखिए। (व्याकरण की कॉपी पर)
2. काव्यांग— (रस, छन्द, अलंकार) लिखिए।
3. आदिकाल व भक्तिकाल की रचनाएं व प्रवृत्तियों को कंठस्थ कीजिए।

**ENGLISH-(CBSE)**

- 1- Write an article on the advantage and disadvantage of working on Mobile Phone.
- 2- Write a letter for job for the post of an assistant professor of Physics to the manager of SDPG College Aligarh fallen vacant recently. Give required Bio Data also.
- 3- Prepare all the taught topics for snap test.

**ENGLISH-(UP BOARD)**

- 1- Write an essay on the advantage and disadvantage of online education.
- 2- Write a letter to the principal of your school for a regular game period for maintenance of physical and mental fitness.
- 3- Prepare all taught topics for snap test.

**PHYSICS-(CBSE & UP BOARD)**

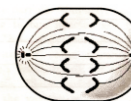
- 1- The refractive index  $\mu$  of a transparent medium varies with wavelength  $\lambda$  of the lights as  $\mu = A + (B / \lambda^2)$ , Where A and B are constants. Find the dimensional formulae and SI units of A and B.
- 2- When a force of 150N is applied to a body, it is displaced by 15m making an angle of  $60^\circ$  with the force. Find out the work done by the force.
- 3- If vector  $\vec{A} = 4\hat{i} + 3\hat{j}$  and  $\vec{B} = 5\hat{i} - 2\hat{j}$ , then find out the value of  $\vec{A} \cdot \vec{B}$ .
- 4- If vector  $\vec{A} = 3\hat{i} + 4\hat{j} + 6\hat{k}$  and  $\vec{B} = 2\hat{i} - 5\hat{j}$ . Find  $\vec{A} \cdot \vec{B}$ .
- 5- If vectors  $\vec{A} = \hat{i} + 3\hat{j} + 2\hat{k}$  and  $\vec{B} = 3\hat{i} + \hat{j} + 2\hat{k}$ , then find the value of  $\vec{A} \times \vec{B}$ .

**CHEMISTRY-**

- 1- The energy of a photon is 10 MeV. What is the wavelength of radiation?
- 2- Calculate energy of one mole of photons of radiation whose frequency is  $5 \times 10^{14}$  Hz.
- 3- Calculate the wave number for the shortest wavelength during transition in the Balmer series of atomic hydrogen.
- 4- Calculate the radius of first orbit of  $\text{He}^+$  and second orbit of  $\text{Li}^{2+}$ .
- 5- Calculate the energy of electron in third orbit of  $\text{Li}^{2+}$  in J/mol.
- 6- Calculate the radius of first, second and third Bohr's orbit of H-atom.

**BIOLOGY-(UP&CBSE)**

- 1- A cell divide by mitosis in 1 minutes if a culture tube is  $1/8^{\text{th}}$  filled in 20 minutes when will the tube will be completely filled.
- 2- Given below is a diagram representing a stage during the mitotic cell division. Study the diagram and answer the following questions:



- (i) Identify the stage by giving a suitable reason.
  - (ii) Is it a plant or an animal cell? Give a reason to support your answer.
  - (iii) Draw a neat, labelled diagram of the stage which follows the one shown in the diagram.
  - (iv) How many chromosomes will each daughter cell have after the completion of the above division?
  - (v) Name the four nitrogenous bases.
- 3- How are the structures of prokaryotic and eukaryotic cells are the same and different?
  - 4- How are the structures of plant and animal cells are the same and different?
  - 5- Where does the water present in the egg go after boiling the egg?
  - 6- Why cannot Vitamin C be stored in our body?
  - 7- Define how enzyme reduce activation energy.
  - 8- How many bivalents are possible if a diploid cell undergoing meiosis has 36 chromosome.

- 5- Prove that-  
 $(\cos x + \cos y)^2 + (\sin x - \sin y)^2 = 4 \cos^2(x+y)/2$
- 6- Let  $A = \{1, 2, 3, 4\}$ ,  $B = \{1, 4, 9, 16, 25\}$  and  $R$  be a relation defined from  $A$  to  $B$  as,  $R = \{(x, y) : x \in A, y \in B \text{ and } y = x^2\}$   
 (a) Depict this relation using arrow diagram. (b) Find domain of  $R$ .  
 (c) Find range of  $R$ .  
 (d) Write co-domain of  $R$ .
- 7- Find the domain and Range of the function  $f(x) = (x^2 - 4)^{1/2}$ .
- 8- Convert  $(2/7)^\circ$  into degree measure.
- 9- Draw the graphs of the function  $f(x) = 1/x$  and hence find its range.
- 10- Convert  $234^\circ 15' 30''$  into radian measure.
- 11- Draw the graph of the greatest integer function  $f(x) = [x]$  and find its range.
- 12- Prove that-  
 $\cos 20^\circ \cdot \cos 40^\circ \cdot \cos 60^\circ \cdot \cos 80^\circ = 1/16$ .
- 13-  $A$  and  $B$  are two sets such that  $n(A - B) = 14 + x$ ,  $n(B - A) = 3x$  and  $n(A \cap B) = x$ . Draw a Venn diagram to illustrate this information.  
 If  $n(A) = n(B)$ , Find (i) the value of  $x$  (ii)  $n(A \cap B)$ .
- 14- If  $S = \{a, e, i, o, u\}$ ,  $A = \{a, e, i\}$ ,  $B = \{e, o, u\}$  and  $C = \{a, i, u\}$ .  
 Then verify that-  $A \cap (B - C) = (A \cap B) - (A \cap C)$ .
- 15- Find the value of  $\tan(22^\circ 30')$ .

### **COMPUTER SCIENCE (CBSE)**

- 1- Draw a boolean logic diagram for the following expression:-  
 •  $F = AB(C+D)$   
 •  $Q = (A+B) \cdot (C \cdot A)$   
 •  $F = AB + BC(B+C)$   
 •  $F = X(X'+Y') \cdot Z+W'$
- 2- Draw the truth table for the following boolean expression:-  
 •  $A'B + C(A+B')$   
 •  $(X+Y')(Y+Z')$   
 •  $(A+B+C') + AB'C'$   
 •  $A \cdot B' + (A'+B'+C')$
- 3- Convert the following hexadecimal number to their equivalents  
**Octal number:-**  
 • (BA9)  
 • (ACE8)  
 • (78BD)  
 • (AEFB)  
 • (AABDEF)

### **COMPUTER (UP BOARD)**

- 1- Create a program which after checking a letter input by the user defines whether it is a consonant or a vowel.
- 2- Write a c++ program to find sum of first 'N' Natural number.
- 3- Differentiate between POP & OOP with example.
- 4- Explain Web browser, home page, Webpage, Website, Server, Client, Workstation.

### **PHYSICAL EDUCATION**

- 1- Write the importance of Physical Education.
- 2- Write about the following:  
 (i) Olympic flag (ii) Olympic oath (iii) Olympic torch
- 3- Make a practical / manual file of any one sport:  
 (i) Volley Ball (ii) kabaddi (iii) Kho-Kho
- 4- Write the career options in Physical Education.
- 5- Write an Essay on the Importance of Games and Sports.