PM SHRI KENDRIYA VIDYALAYA SUKNA

HOLIDAY HOMEWORK FOR WINTER BREAK

SESSION: 2023-24

CLASS:XI SC

SUBJECT:HINDI

1. भारत माता पाठ के प्रश्न–उत्तर लिखें।
2. अपने आस–पास घाटी किसी घटना का रिपोर्ट तैयार करें।

3.'संथाल जनजाति' पर एक परियोजना कार्य बनाएं।

4. दुष्यंत कुमार का जीवन परिचय लिखें।

SUBJECT:ENGLISH

Answer the following questions:

1. Where is the town of Hor? Describe the town.
2. Why was the narrator relieved on meeting Norbu?
3. Why doesn't the father know anything about his son although they have lived in the same house?
4. The father is ready to have his prodigal son returned. What inference can you draw from this?
5. The king in "The Tale of Melon City" is just and placid, why does he then lose his temper? Does he carry his notion of justice too far?
6. Susan's mother was wise in experience. What hints did she give of her wisdom?

SUBJECT:MATHS

- **If U = {1,2,3,4,……..,10} is the universal set for the sets A = {2,3,4,5} and B = {1,2,3,4,5,6}, then verify that (AUB)'' = A''∩B''.**
- **If A = {1, 2, 3, 4, 5}, B = {1, 3, 5, 8}, C = {2, 5, 7, 8}, verify that A– (B U C) = (A–B) ∩ (A –C).**
- **Let A and B be two finite sets such that n(A – B) = 30, n (A U B) = 180, n(A ∩ B) = 60, find n(B).**

Find the coordinates of the foci, the vertices, the length of major axis, the minor axis, the eccentricity and the length of the latus rectum of the ellipse $\frac{x^2}{16} + \frac{y^2}{9} = 1$. (3 marks)

If a parabolic reflector is 20 cm in diameter and 5 cm deep, find the focus. (3 marks)

Find the equation of the parabola with vertex (0,0), passing through the point (4,5) and symmetric about the x - axis. (2 marks)

Find the equation of the circle which passes though the points (3,7), (5,5) and has its centre on the line x - 4y = 1. (5 marks)

Find the equation of the circle which passes through the points (2, –2), and (3, 4) and whose centre lies on the line $x + y = 2$. (3 marks)

Examine whether the points (2,3) lies inside, outside or on the circle $x^2 + y^2 + 2x + 2y - 7 = 0$. (2 marks)

Find the equation of the hyperbola satisfying the give conditions: Vertices (0, ±3), foci (0, ±5). (2 marks)

Find the coordinates of the foci, the vertices, the length of major axis, the minor axis, the eccentricity and the length of the latus rectum of the ellipse $\frac{x^2}{25} + \frac{y^2}{100} = 1$. (3 marks)

Find the centre and radius of the circle : $x^2 + y^2 - 8x + 10y - 12 = 0$

Find the equation of the hyperbola satisfying the give conditions: Foci (±4, 0), the latus rectum is of length 12. (3 marks)

Find the equation of the circle with centre (–a, –b) and radius $\sqrt{a^2 - b^2}$. (2 marks)

Find the point in XY-plane which is equidistant from three points A(2,0,3), B(0,3,2) and C(0,0,1). (3 marks)

Name the octants in which the following points lie: (2, 3, 4), (1, –2, 6). (1 mark)

Find the ratio in which the line joining the points (1, 2, 3) and (- 3, 4, - 5) is divided by the xy-plane. Also, find the coordinates of the point of division. (3 marks)

A point P is at a distance of 6 units from the origin on the Z axis. Write the coordinates of P. (1 mark)

Find centroid of a triangle, mid-points of whose sides are (1, 2, - 3), (2, 0, 1) and (- 1, 1, - 4). (5 marks)

Find lengths of the medians of the triangle with vertices A (0, 0, 6), B (0, 4, 0) and (6, 0, 0). (5 marks)

Find the ratio in which the YZ-plane divides the line segment formed by joining the points (-2,4,7) and (3,-5,8).

SUBJECT:PHYSICS

1. Complete Practical record book till resonance experiment and submit on 15 January 2024.

2. Those who have not submitted the investigatory project submit on 16 January 2024.

3. Practice numerical of part 2 chapters.

4. Learn and practice given three chapters for Periodic test 2. Chapters are Mechanical properties of solids, Mechanical properties of Fluids and Thermal properties of matter till topic Modes of tranfer of heat.

SUBJECT:BIOLOGY

1. Revision for Periodic Test -2.
   Ch - Photosynthesis in Higher plants
   Ch - Reproduction in Plants
   Ch - Plant growth and development

2. Complete exercise questions in notebook
3. Solve practice paper in notebook.

SUBJECT:CHEMISTRY

1. The pH of the neutral water at 25°C is 7.0. When the temperature increases, the ionisation of water increases, but the concentration of H+ ions as well as OH– ions are the same. What would be the pH of pure water at 60°C?

(i) Equal to 7.0

(ii) Greater than 7.0

(iii) Less than 7.0

(iv) Equal to zero

2. Ka, 2Ka, and 3Ka are the respective ionization constants for the following given reactions.

$H_2S \rightleftharpoons H^+ + HS^-$

$HS^- \rightleftharpoons H^+ + S^{2-}$

$H_2S \rightleftharpoons 2H^+ + S^{2-}$

The correct relationship in between Ka1, Ka2 and Ka3 will be

(i) $Ka3 = Ka1 \times Ka2$

(ii) $Ka3 = Ka1 + Ka2$

(iii) $Ka3 = Ka1 - Ka2$

(iv) $Ka3 = Ka1 / Ka2$

3. The ionisation constant of the weak base MOH is given by the expression;

$Kb = [M^+][OH^-]/[MOH^-]$

Values of the ionisation constant for some weak bases at particular temperatures give below:

Base: Di-methylamine, Urea, Pyridine, and Ammonia

Kb: 5.4 × 10-4, 1.3 × 10-14, 1.77× 10-9, 1.77 × 10-5

Arrange the following bases in the decreasing order of the extent of their ionisation at equilibrium. Which among the above base is the strongest?

4. Arrange the following compounds in increasing order for pH

KNO3 (aq), CH3COONa (aq), NH4Cl (aq), C6H5COONH4 (aq)

5. The value of Kc for the given reaction 2HI (g) ⇋ H2 (g) + I2 (g) is 1 × 10-4

At the given time, the composition of the reaction mixture is given as follows;

[HI] =2 × 10-5 mol, [H2] =1 × 10-5 mol as well as [I2] =1 × 10-5 mol.

In which direction would the reaction proceed?

6. Which of the following arrangements represents an increasing oxidation number of the central atom?

(i) CrO_2^- , ClO_3^- , CrO_4^{2-} , MnO_4^-

(ii) ClO_3^- , CrO_4^{2-} , MnO_4^- , CrO_2^-

(iii) CrO_2^- , ClO_3^- , MnO_4^- , CrO_4^{2-}

(iv) CrO_4^{2-} , MnO_4^- , CrO_2^- , ClO_3^- ,

7. Fluorine reacts with ice and results in the change:

$H_2O(s) + F_2(g) \rightarrow HF(g) + HOF(g)$

Justify that this reaction is a redox reaction

8. Assign oxidation number to the underlined elements in each of the following species:
(a)$NaH_2\underline{P}O_4$
(b)$NaH\underline{S}O_4$
(c)$H_4\underline{P_2}O_7$
(d)$K_2\underline{Mn}O_4$
(e)$Ca\underline{O_2}$
(f)$NaBH_4$
(g)$H_2S_2O_7$
(h)$KAl(\underline{S}O_4)_2 \cdot 12H_2O$

9. The Mn^{3+} ion is unstable in solution and undergoes disproportionation to give Mn^{2+} , MnO_2 and H^+ ion. Write a balanced ionic equation for the reaction.

10. The standard electrode potentials are given of the following elements:

K^+/K	=	–2.93V
Ag^+/Ag	=	0.80V
Hg^{2+}/Hg	=	0.79V
Mg^{2+}/Mg	=	–2.37V
Cr^{3+}/Cr	=	–0.74V

Arrange these metals in their increasing order of reducing power.

SUBJECT:COMPUTER SCIENCE

1. COMPLETE YOUR PRACTICLE FILE(HANDWRITTERN & INDIVIDUAL)

2. COMPLETE THE PROJECT FILE(PRINTED & GROUP WISE-AS FOLLOWS)

Roll No	Name	Group	Project (using Python Language)
4	**Anirudh Jaiswal (Captain)**	1	Menu-Driven Program to create a simple calculator
22	NAMANKH DOGRA		
6	**Ankush Singh(Captain)**	2	Menu-Driven Program to create a Phone Directory
31	Samadrita Mitra		
16	MD. ASIF		
13	**Himanshu(Captain)**	3	Number Guessing Game
21	Nabo Kumar Barman		
26	Palak Gupta		
35	SHUBHAJEET SAHA	4	Choice Based Games (Text Adventure Game)
3	**Ambuj Dubey(Captain)**		
1	AVISHEK YADAV		
23	NAVYA SINGH	5	Hotel management – Menu driven program
2	AJIT KUMAR CHOUDHARY		
30	**Reshmi Singha(Captain)**		
34	Simran Thakur	6	Guess the word /Hangman
37	**PRIYA CHAUHAN(Captain)**		
17	MOHAMMAD HASNOOR		
20	MRINMOY CHANDA	7	Rock, Paper, Scissors
25	OM SAIBO		
15	**Karnish Chettri Thapa(Captain)**		
8	Avi Mishra	8	Days Calculator
9	**Ayush Raj Singh(Captain)**		
10	BIKKY KUMAR ROY		
12	**Farman khan(Captain)**	9	Tic-Tac-Toe
18	SOHEL KHAN		