1. ENGLISH

1. In the light of the play "Mother's Day", describe each character in your own words. Which character do you think is the most interesting character and why?

2. Go through the story "Discovering Tut: The Saga Continues. Write a paragraph on the history of Egypt in the context of this story and critically analyse the mysterious death of king Tut.

3. Write a brief summary of the poem "The Laburnum Top". Explore other poems by Ted Hughes.

4. "No matter how impossible a situation may seem, there is always hope to emerge victorious and prove yourself". Justify the above statement in the context of the lesson "Birth" by A J Cronin.

2.विषय: हिंदी

1. निम्नलिखित विषयों पर लगभग 120 शब्दों में रचनात्मक लेख लिखिए।

क. लाक डाउन का जीवन

ख. नई पीढ़ी और नई चुनौतियाँ

2. अस्पताल मे साफ-सफाई न होने के कारण गंदगी और अव्यवस्था के माहौल की शिकायत करते हुए

वहाँ के मुख्य चिकित्साधिकारी को एक पत्र लिखिए।

3. भारतीय स्टेट बैंक के प्रबंधक को एक पत्र लिखिए जिसमें आपके बचत खाता को बंद करने का अनुरोध किया गया हो।

4. इन शब्दों को शब्दकोष के क्रमानुसार लिखिए।

क. शर्म, श्रम, शंका, श्रद्धा, श्रवण ।

ख. क्षमा, कृष, कंपन, कंस, कार्य ।

ग. दृग, दर्द, दंश, दंत, दर्पण ।

घ. ग्यारह, बारह, तेरह, चौदह, पंद्रह ।

च. ज्वाला, ज्ञान, ज्येष्ठ, जौहरी ।

5. भारत में समाचार पत्रों के आरंभ और विकास पर एक प्रोजेक्ट कार्य तैयार कीजिए। कुछ आवश्यक चित्रों का प्रयोग भी करें । (यह कार्य दो पृष्ठों से अधिक न हो)

3.MATHEMATICS

SETS.

Write the following sets in set builder form

1. A={5,10,15,20,25}
2. B={1/2 ,2/3,3/4,4/5,5/6}
3. C={1/2, 2/5, 3/10, 4/17,5/26}

Write the following sets in roaster form

4. A={x: x∈z,x^2<25}
5. B={x:x is a letter of the word "principal"}
6. For A = {1, 2, 3, 4, 5, 6}; B = {3, 4, 5, 6}, C = {4, 5, 7, 8} and U = {1, 2, ----------,8}

   Verify that   (1) $\left(A \cup B\right)' = A' \cap B'$;

   (2) $\left(A \cap B\right)' = A' \cup B'$

RELATIONS AND FUNCTIONS

1.   7.If $A = \left\{x : x \in N, x < 4\right\}$, $B = \left\{x : x^2 + 5x - 6 = 0, x < 0\right\}$ then find $A \times B$

2.   Let $A = \left\{1, 2, 3, 4, 5, 6\right\}$ Define a relation R on set A, $R = \left\{(x, y) : y = x + 1\right\}$. Write R , represent R using arrow diagram and also write domain and range of R .

3.   Find the domain and range of the following functions::

a) $f(x) = \sqrt{x-4}$ b) $f(x) = \dfrac{1}{\sqrt{1-x}}$ c) $f(x) = \sqrt{25 - x^2}$

TRIGONOMETRIC FUNCTIONS

1) Evaluate : (i) Cos (- 480^0)   (ii) Sin (- 1125^0)   (iii) cot (690^0)
2) $\tan x = \frac{3}{4}$, x lies in 3rd quadrant, find $\sin\frac{x}{2}$, $\cos\frac{x}{2}$ and $\tan\frac{x}{2}$

3) Prove that: $\cot x \cot 2x - \cot 2x \cot 3x - \cot 3x \cot x = 1$

4) Prove that: $\dfrac{(\sin 7x + \sin 5x) + (\sin 9x + \sin 3x)}{(\cos 7x + \cos 5x) + (\cos 9x + \cos 3x)} = \tan 6x$

COMPLEX NUMBERS

Simplify and represent the following in $a + ib$

1) $i^{49} + i^{68} + i^{89} + i^{110}$

2) $1 + i^{10} + i^{20} + i^{30}$

3) $2\,i^2 + 6\,i^3 + 3i^{16} - 6\,i^{19} + 4\,i^{25} + 4$

FOR CLASS XI-A (SCIENCE)

1. PHYSICS

1 Prepare an investigatory project (refer the suggested investigatory part of physics syllabus 2022-23)

https://cbseacademic.nic.in/web_material/CurriculumMain23/SrSec/Physics_SrSec_2022-23.pdf

Solve the following questions

1. A rocket with a lift-off mass 20,000 kg is blasted upwards with an initial acceleration of 5.0 m s-2. Calculate the initial thrust (force) of the blast.

2   A body of mass 0.40 kg moving initially with a constant speed of 10 m s-1 to the north is subject to a constant force of 8.0 N directed towards the south for 30 s. Take the instant the force is applied to be t = 0, the position of the body at that time to be x = 0, and predict its position at t = –5 s, 25 s, 100 s.

3 A truck starts from rest and accelerates uniformly at 2.0 m s-2. At t = 10 s, a stone is dropped by a person standing on the top of the truck (6 m high from the ground). What are the (a) velocity, and (b) acceleration of the stone at t = 11s ? (Neglect air resistance.)

4 A bob of mass 0.1 kg hung from the ceiling of a room by a string 2 m long is set into oscillation. The speed of the bob at its mean position is 1 m s-1. What is the trajectory of the bob if the string is cut when the bob is (a) at one of its extreme positions, (b) at its mean position.

5 Two billiard balls each of mass 0.05 kg moving in opposite directions with speed 6 m s-1 collide and rebound with the same speed. What is the impulse imparted to each ball due to the other ?

6 A shell of mass 0.020 kg is fired by a gun of mass 100 kg. If the muzzle speed of theshell is 80 m s-1, what is the recoil speed of the gun ?

7 A batsman deflects a ball by an angle of 45° without changing its initial speed which is

equal to 54 km/h. What is the impulse imparted to the ball ? (Mass of the ball is 0.15 kg.)

8 A stone of mass 0.25 kg tied to the end of a string is whirled round in a circle of radius 1.5 m with a speed of 40 rev./min in a horizontal plane. What is the tension in the string ? What is the maximum speed with which the stone can be whirled around if the string can withstand a maximum tension of 200 N ?

9 Explain why

(a) a horse cannot pull a cart and run in empty space,
(b) passengers are thrown forward from their seats when a speeding bus stopssuddenly,
(c) it is easier to pull a lawn mower than to push it,
(d) a cricketer moves his hands backwards while holding a catch.

10 solve the ncert exercise questions 5.27 to 5.32 from laws of motion.

2. CHEMISTRY

1. In Rutherford's experiment, generally the thin foil of heavy atoms, like gold, platinum etc. have been used to be bombarded by the alpha-particles. If the thin foil of light atoms like aluminium etc. is used, what difference would be observed from the above results ?

2. Arrange the following type of radiations in increasing order of frequency: (a) radiation from microwave oven (b) amber light from traffic signal (c) radiation from FM radio (d) cosmic rays from outer space and (e) X-rays.

3.Nitrogen laser produces a radiation at a wavelength of 337.1 nm. If the number of photons emitted is 5.6×10^{24}, calculate the power of this laser.

4. Lifetimes of the molecules in the excited states are often measured by using pulsed radiation source of duration nearly in the nano second range. If the radiation source has the duration of 2 ns and the number of photons emitted during the pulse source is 2.5×10^{15}, calculate the energy of the source.

5. If the density of methanol is 0.793 kg L^{-1}, what is its volume needed for making 2.5 L of its 0.25 M solution?

6. How many significant figures are present in the following?
(i) 0.0025
(ii) 208
(iii) 5005
(iv) 126,000
(v) 500.0
(vi) 2.0034

7. Solve PT 1 question paper Q no.9 to18.

8. Solve exercise questions 2.50 to 2.60 of chapter 2 Structure of atom.

3. BIOLOGY

VERY SHORT ANSWER TYPE QUESTIONS (UNIT-1) CHAPTERS 1-4

1. Name the processes that are basic to taxonomy?
2. What are the rules to be followed in Binomial nomenclature?
3. What type are methanogens? Why are they called so?
4. Have you heard about bio-fertilisers? What are they? Why are farmers advised to used them in paddy
fields?
5. a) What does the term virus mean?
   b) What are the symptoms of viral diseases seen in plants? (Any two)
6. Who proposed 2 kingdom classification? What was the drawback of this classification?
7. Why are red tides caused and why are they harmful?
8. Deuteromycetes are called imperfect fungi? Why?
9. Conidia and ascospores both are produced in ascomycetes? How are they different from each other?
10. What does the following termmean :
    a. Monoecious   b. Dioecious   c. Homothallic   d. Heterothallic
11. How are liverworts and Mosses are different from each other?
12. What is alternation of generation? Explain with reference to Bryophytes and Pteridophytes?
13. Write 4 economic importance of Gymnosperms?
14. Explain the following terms in relation to angiosperm:-
    a) Syngamy   b) double fertilization   c) Triple fusion d) Post fertilization changes
15. Differentiate Chlrophyceae and Rhodophyceae with reference to the following:
    a) Pigments
    b) Reserve food material
16. Roots in some gymnosperms have fungal or algal association. Give examples and their role in the plants?
17. How are Poikilothermic animals different from that of Homoiothermic animals? Give an example of each?
18. What are peculiar features seen in parasitic Platyhelminthes?
19. How Platyhelminthes are different from that of Aschelminthes?
20. Fill in the blanks a, b, c, d in the table given below:

Phylum/Class	Excretory organs	Respiratory organs
Arthropoda	(a)	Gill/Lungs/Tracheal system
(b)	Nephridia	Skin/Parapodia
Mollusca	Metanephridia	(c)

Amphibia	(d)	lungs

21. Provide appropriate technical term in the space provided.

    a) Blood filled cavity in arthropoda_____

    b) Free floating from of Cnidaria_____

    c) Stinging organs of jelly fishes_____

    d) Lateral appendages in aquatic annelids_____

22. A)What are Polyps and medusa in Cnidaria?

    b) How do they alternate with each other?.

Computer Science
Draw flow chart for the following

- Write a program to input the value of x and n and print the sum of the following series:

    �; $1+x+x^2+x^3...+x^n$

    �; $1-x+x^2-x^3...+(-1)^n x^n$

    �; $x-\dfrac{x2}{2!}+\dfrac{x3}{3!}-\dfrac{x4}{4!}...+(-1)^n \dfrac{x_n}{n!}$

    �; $x-\dfrac{x2}{2}+\dfrac{x3}{3}-\dfrac{x4...}{4}+(-1)n \dfrac{xn}{n}-$

- Determine whether a number is a perfect number, an armstrong number or a palindrome.
- Input a number and check if the number is a prime or composite number.
- Display the terms of a Fibonacci series.
- Compute the greatest common divisor and least common multiple of two integers.
- Count and display the number of vowels, consonants, uppercase, lowercase characters in string.
- Input a string and determine whether it is a palindrome or not; convert the case of characters in a string.
- Find the largest/smallest number in a list/tuple
- Input a list of numbers and swap elements at the even location with the elements at the odd location.
- Input a list of elements, sort in ascending/descending order using Bubble/Insertion sort.
- Input a list/tuple of elements, search for a given element in the list/tuple.
- Input a list of numbers and find the smallest and largest number from the list.
- Create a dictionary with the roll number, name and marks of n students in a class and display the names of students who have scored marks above 75.

FOR CLASS XI-B (HUMANITIES)

1.HISTORY

1. What were the major hazards to agriculture in Mesopotamia?

2. Write about the family norms of Mesopotamia.

3. Discuss whether city life would have been possible without the use of metals.

4. To what extent the clay tablet did prove helpful to archaeologists?

5. Why do we say that it was not natural fertility and high levels of food productions that were the causes of early urbanization?

6. Why is Constantine remembered so in the Roman Empire?

7. Describe the living standard of Aristocrat's (nobles) during the Roman Empire.

8. Who was Nero and why is he famous even today

9. What had resulted when debt-bondage did the attack on the labor instincts?

10. Describe some less-advanced states under the Roman Empire.

2.GEOGRAPHY

PART-A: FUNDAMENTALS OF PHYSICAL GEOGRAPHY

1. Describe briefly the aims and objectives of geography.

2 What is geography? What are the two main branches of geography?

3. What are the sub-fields of biogeography geography?

4. Why are terrestrial planets rocky?

5. Explain the process of degassing.

6. How were stars formed?

7. Explain the Big-Bang Theory with the help of a diagram.

8. Explain three types of earthquakes waves.

9. What are the different indirect sources to know the earth's interior?

10. Describe the interior structure of the earth with the help of a diagram.

11. What are plate tectonics?

12. Name the six minor plates.

13. What are the evidences in support of the Continental Drift Theory?

14. What are the types of weathering?

15. Explain how weathering is responsible for biodiversity.

16. What are the various factors control the formation of soils?

PART-B: INDIA: PHYSICAL ENVIRONMENT

17. What are the implications of India having a long coastline?

18. Name the countries constitute the Indian subcontinent?

19. What are the three geological divisions of India?

20. What are the major physiographic divisions of India?

21. What are the three mountain ranges of the Himalayas?

22. Briefly describe the significance of the Northern Plains.

3.ECONOMICS

1. Define statistics?

2. Give one example of micro economics.

3. Who is a consumer?

4. Define PPC.

5. Define sample.

6. What is raw data?

7. Write the limitations of statistics.

8. Make a difference between primary data & secondary data.

9. Show the relationship between various economic activities in an economy.

10. Define random sampling with a suitable example.

11. Define economic problem. Why it arises? Explain with examples

12. State the differences between Microeconomics and Macroeconomics.

13. Discuss the importance of statistics in economics.

14. (a) Define an economy.

   (a) Differentiate between the concepts of positive economics and normative economics with examples

   15. What is a centrally planned economy? What are its main features?

4.POLITICAL SCIENCE

1. What is the aim of Indian Constitution?

2. Define Constitution.

3. What is Preamble?

4. Explain the need of the Constitution.

5. What are the main features of Indian Constitution?

6. Why Indian Constitution is said to be a 'living document'?

7. What is Political Theory?

8. What are the three types of Political Theory?

9. Why is Political Theory important?

10. Why do we need to study Political Theory?

11. What are the characteristics of Political Theory?

12. Explain five ways in which the Political Theory can be useful to the citizen of the country.