HOLIDAY HOMEWORK
CLASS :- XI (SCIENCE)
Let's Pen The Pandemic : Covid - 19

"Success is the sum of several small efforts repeated often day in and day out."

GENERAL INSTRUCTIONS TO BE FOLLOWED WHILE DOING HOLIDAY HOMEWORK:

- It is compulsory to attempt each subject.

- Summer vacations are going to be started from June 10 to 25, 2020.
- Submit your assignments to Subject teachers as the school reopens.
- Holiday homework should be done as per the given instructions
- Label properly the name, class roll no and subject.

- The work will be assessed for the neat handwriting, presentation, creativity and submission of the work on time.
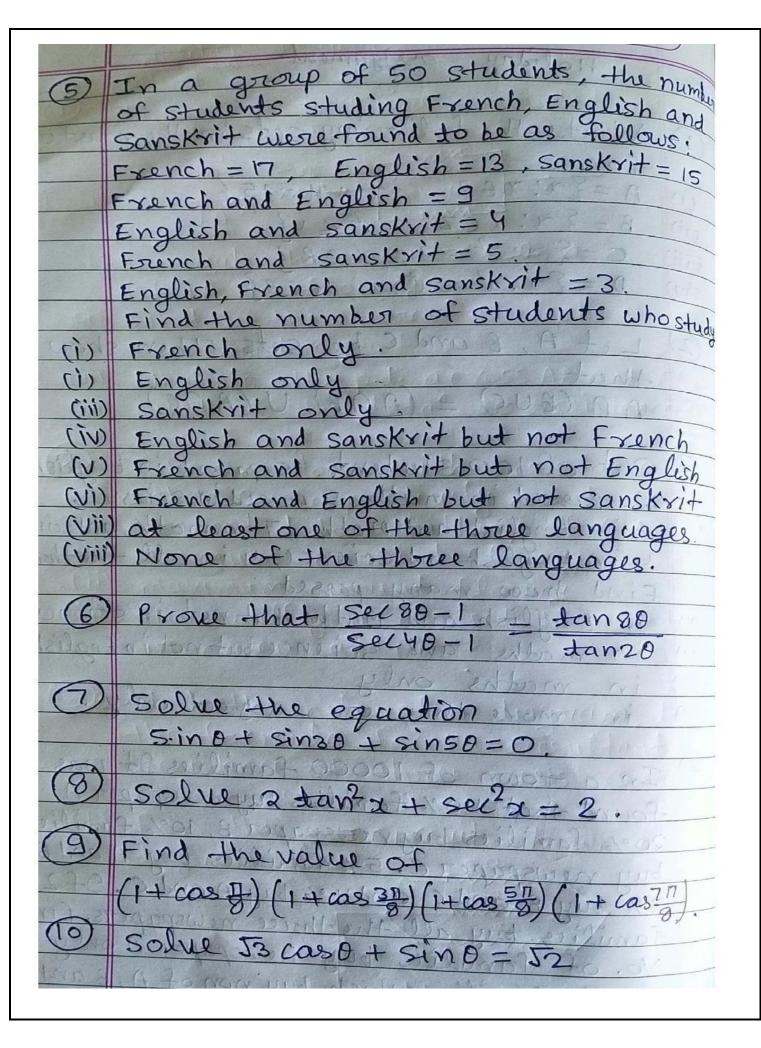
ENGLISH
Q1. Cut and paste any five articles on the theme environment from the newspaper.

Q2. Write a speech on the topic "Man versus Machines".

Q3. Watch at least two English films.

विषय- हिंदी

रचनात्मक कार्य (एक्टिविटी

कोरॉना शब्दावली

प्रश्न - दिए गए कॉरोना से संबंधित शब्दों के अर्थों को जानिए तथा शब्दों व उनके अर्थों को लिखकर चित्रों के माध्यम से एक फाइल तैयार कीजिए।

1 - virus - विषाणु

2- novel - नया

3 - infection- संक्रमण

4 - droplets बूंदे

5 - contagious- संक्रामक

6 - outbreak प्रकोप

7 - screening जांच

8- symptoms लक्षण

9- patient zero सबसे पहला बीमार व्यक्ति

10- diagnose निदान

11- contact tracing संक्रमित व्यक्ति किस - किस के संपर्क में आया

12- epidemic महामारी

13- pandemic सर्वव्यापी महामारी

14- fomit संक्रमित वस्तुएं

15- quarantine संग्रोथ

16- isolation एकांत

17- social distance सामाजिक दूरी

18- community spread पूरे समुदाय में रोग का फैलना

19- sanitizer प्रक्षालक

20- PPE (personal protective equipments) बीमारी से बचने के लिए डॉक्टर द्वारा प्रयोग की जाने वाली वस्तुएं।

MATHEMATICS

① Write the following sets in the roaster form.

(i) $A = \{x : x \in R, \quad 2x + 11 = 15\}$

(ii) $B = \{x : x \in Z, \quad x^2 \leq 4\}$

(iii) $C = \{x : x^2 = x, \quad x \in R\}$

(iv) $D = \{x : x^2 - 5x + 2, \quad x \in R\}$

② Let A, B and C be sets. Then show that

$$A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$$

③ Out of 100 students, 15 passed in English, 12 passed in maths, 8 passed in science, 6 in English and Maths, 7 in maths and science 4 in English and science, 4 in all the three. Find how many passed

(i) in English and maths but not in science

(ii) in maths and science but not in English.

(iii) in maths only

(iv) in more than one subject only.

④ In a town of 10000 families It was found that 40% families buy newspaper A, 20% families buy newspaper B, 10% families buy newspaper C, 5% families buy A and B, 3% buy B and C and 4% buy A and C. If 2% families buy all the three newspapers. find.

(a) No. of families buy newspaper A only.

(b) No. of families which buy non of A, B and C.

⑤ In a group of 50 students, the number of students studing French, English and Sanskrit were found to be as follows:
French = 17, English = 13, Sanskrit = 15
French and English = 9
English and sanskrit = 4
French and sanskrit = 5.
English, French and sanskrit = 3.
Find the number of students who study

(i) French only.
(i) English only
(iii) Sanskrit only
(iv) English and sanskrit but not French
(v) French and sanskrit but not English
(vi) French and English but not sanskrit
(vii) at least one of the three languages.
(viii) None of the three languages.

⑥ Prove that $\dfrac{\sec 8\theta - 1}{\sec 4\theta - 1} = \dfrac{\tan 8\theta}{\tan 2\theta}$

⑦ Solve the equation
$\sin \theta + \sin 3\theta + \sin 5\theta = 0$.

⑧ Solve $2\tan^2 x + \sec^2 x = 2$.

⑨ Find the value of
$\left(1 + \cos \dfrac{\pi}{8}\right)\left(1 + \cos \dfrac{3\pi}{8}\right)\left(1 + \cos \dfrac{5\pi}{8}\right)\left(1 + \cos \dfrac{7\pi}{8}\right)$.

⑩ Solve $\sqrt{3} \cos \theta + \sin \theta = \sqrt{2}$

(11) If $\cot x = -\frac{5}{12}$ and $\frac{\pi}{2} < x < \pi$.
Find the value of other trigonometric functions.

(12) Find the value of
(i) $\cot 15°$ (ii) $\sec 75°$

(13) Prove that
$$\frac{\sin 5x - 2\sin 3x + \sin x}{\cos 5x - \cos x} = \tan x$$

(14) Prove that
$$\tan 4x = \frac{4\tan x (1 - \tan^2 x)}{1 - 6\tan^2 x + \tan^4 x}$$

(15) If $m\sin\theta = n\sin(\theta + 2\alpha)$ then prove that
$$\tan(\theta + \alpha) = \frac{m+n}{m-n} \cdot \tan\alpha$$

(16) If $\tan(A+B) = P$ and $\tan(A-B) = Q$ then Prove that
$$\tan 2A = \frac{P+Q}{1-PQ}.$$

(17) For any sets A and B, show that
$$P(A \cap B) = P(A) \cap P(B)$$

(18) List all the subsets of following sets.
$\{1, 0, 3\}$, $\{a, b\}$ and $\{1, 2, \{3, 4\}\}$

(19) Prove that $2\sin^2\frac{3\pi}{4} + 2\cos^2\frac{\pi}{4} + 2\sec^2\frac{\pi}{3} = 10$.

(20) Prove that $\cos^2 2x - \cos^2 6x = \sin 4x \cdot \sin 8x$.

PHYSICS

Chapter 1&2 physical world, Units and measurement

1. How is science different from technology?

2. What are the similarities between science and art?

3. Astrology is a science comment?

4. What are the various domains of interest in physics?

5. Discuss the role of physics in your daily life?

6. What is the difference between physical and biological science?

7. State the law of conservation of energy give a suitable example for it.What is the need of measurement in physics?

8. Find number of seconds in one year. express them in order of magnitude.

9.calculate the number of times the human heart beats in the life of 60 years old person assume that heart beats once in 0.8 second.

10. Write the dimensional formula Work, force, impulse, pressure, angle, frequency.

11. Convert 1 newton into dyne?

12. Convert 10 erg into joule.

13. Obtain an expression for centripetal force (F) acting on a particle of mass (m)moving with velocity(v) in a circle of radius (r)then proof dimensionally.

14. Write the rules for determining the number of significant figures.

15. If the length and time period of an oscillating pendulum have errors 3% it and 2% respectively then what in the error instrument of small g?

CHEMISTRY

Answers the following questions.

Q1-(a) Why molality is preferred over molarity of a solution?

(b) Empirical formula of a compound 'X' (molar mass 78 gm mol^{-1}) is CH. Write its molecular formula.

2-(a) How are 0.05 m KOH and 0.05 M KOH different from each other?

(b) Calculate the number of molecules present in 22 gm of CO_2 (C=12 u, O=16 u)

3-(a) How many significant figures are present in the following:
(i) 2.01   (b) 100   (c) 0.049   (d) 200.

(b) Classify the following into elements, compounds and mixtures:
water, tea, silver, steel, Carbon dioxide and platinum.

4-(a) In a reaction $A + B_2 \longrightarrow AB_2$, identify the limiting reagent when 2 mole of A are mixed with 3 moles of B_2.

(b)   A substance has molecular formula $C_6H_{12}O_6$. What is its empirical formula?

5-(a) Calculate the mass percent of Calcium, carbon and oxygen in $CaCO_3$.

(b) How many significant figures should be present in the answer of the following calculations?

$$\frac{2.5 \times 1.25 \times 3.5}{2.01}$$

6 (a) A measured temperature on Fahrenheit scale is $200°F$. What will this reading be on Celcius scale?

(b) Calculate the percentage of copper in a sample of $CuCl_2$.
(At. mass $Cu = 63.54$, $Cl = 35.54$)

7-(a) How many electrons are present in NO_3^-?

(b) The no. of electrons, protons and neutrons in a species are equal to 18, 16 and 16 respectively. Assign the proper symbol to the species.

8 (a) On the spectral lines of caesium has a wavelength of 456 nm. Calculate the frequency of this line.

$$(c = 3 \times 10^8 \ m/sec)$$

(b) Which series of hydrogen spectrum lies in (i) visible region and (ii) UV region

9 (a) Which quantum no. determines (i) energy of electron and (ii) orientation of orbital

(b) Write the cation and an anion which is isoelectronic with Ar.

10. Chlorophyll present in green leaves of plants absorbs light at $4.620 \times 10^{14} Hz$. Calculate the wavelength of radiation in nanometre. Which part of the electromagnetic spectrum does it belong to?

BIOLOGY

1) To make a herbarium file by collecting the different types of plants. Press them in news paper and dry them. You have to write classification of each and every type of plant.

Make at least 10 pages.

2) Write at least 10 questions from chapter 1 to chapter 4 that is not related with NCERT exercises and also learn them.

PHYSICAL EDUCATION

• Write 5 Skills of anyone Game from Athletics, Archery, Badminton, Boxing, Chess, Judo,
Shooting, Skating, Swimming, Taekwondo with proper diagrams.

• Labelled diagram of 400 M Track & Field with computations.

• List of current National Awardees (Dronacharya Award, Arjuna Award & Rajiv Gandhi
Khel Ratna Award).

Work out

Students will take two bowls and hang them in the balcony of their house. Everyday.

They need to fill them with grains and water respectively to feed the birds.

Note : This activity will help the students to connect to the nature and they will develop a sense of compassion. Visual and Performing Arts

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