# Bal Bharati PUBLIC SCHOOL
Sector-21, Noida

# Winter Holiday Homework
# Class IX 2020-21

## ENGLISH

**Ques 1. Learning Outcome- Generating Awareness about strengthening the bond and relations under 'Ek Bharat Shreshth Bharat Campaign'**

Collect information on the life style, folk songs and dances and highlight the oneness which every Indian acquires as a Citizen. To share the same with other classmates in the form of essay, poetry or Quiz **based on the poem No men are Foreign.**

**All the work has to be uploaded in Google Classroom under the heading Winter Holiday Homework.**

**Ques 2. Learning Outcome- Comprehend and Correlate**

Write an Article in about 150-175 words based on the types of Vegetation and Crops In Arunachal Pradesh and Meghalaya.(**Based on the poem On Killing a Tree**)

**Ques 3. Complete the assignment of Dec-Jan(will be shared through Google Classroom) in notebooks.**

## हिंदी

वर्तमान परिस्थितियों को ध्यान में रखते हुए नव वर्ष के अवसर पर आपने अपनी सोसाइटी में एक जागरूकता अभियान चलाया है, जिसमें पूरी तरह से सतर्क रहते हुए  नव वर्ष मनाने का अनुरोध किया गया है । सभी सोसाइटी वासियों के लिए एक-एक **नारा तथा संदेश** लिखिए, जिसमें कोविड-19 संबंधी निर्देशों का पालन करने की प्रार्थना हो । अपनी अपनी उत्तर-पुस्तिकाओं में आकर्षक नारा एवं संदेश लिखकर गूगल क्लासरूम पर अपलोड  कीजिए ।

इसके साथ ही छात्र E-Portfolio के अंतर्गत हिंदी विषय से संबंधित कार्यपत्रिका,  विभिन्न गतिविधियों में प्राप्त प्रमाण-पत्र, विशेष दिवस हेतु बनाए जाने वाले वीडियो में हिंदी-संबंधी अपना योगदान अपलोड करेंगे ।

विशिष्ट उद्देश्य :-
- परिस्थितियों को आत्मसात करने हेतु तक क्षमता का प्रतिपादन ।
- अभिव्यक्ति हेतु  प्रभावोत्पादकता का पल्लवन ।
- पाठ्यक्रम में  निहित नारा एवं संदेश लेखन हेतु अभ्यास ।
- वैचारिक अभिव्यक्ति हेतु सक्षमता ।

## संस्कृत

**क. वार्तालाप लेखन -** कोरोना संकट काल में  स्वास्थ्य व जीवन की रक्षा के लिए किए गए          उपायों का वर्णन करते हुए मित्र के साथ वार्तालाप को दस वाक्यों में          संस्कृत  में लिखिए ।

**ख. एक भारत श्रेष्ठ भारत गतिविधि -** निर्देशानुसार  गतिविधि  पूर्ण करें|

**ग. कार्यपत्रिका -** नवम्बर, दिसम्बर मास की  कार्यपत्रिकाओं  के उत्तर  उत्तर-पुस्तिका में लिखें व याद करें ।

**घ. धातुरूप -** परस्मैपदी - अस्, कृ, गम्, नी (पाँचों लकार);  आत्मनेपदी- सेव्, लभ्, रुच् (लट्, लृट्)  - सभी कार्य अभ्यास उत्तर-पुस्तिका में लिखें व याद करें ।
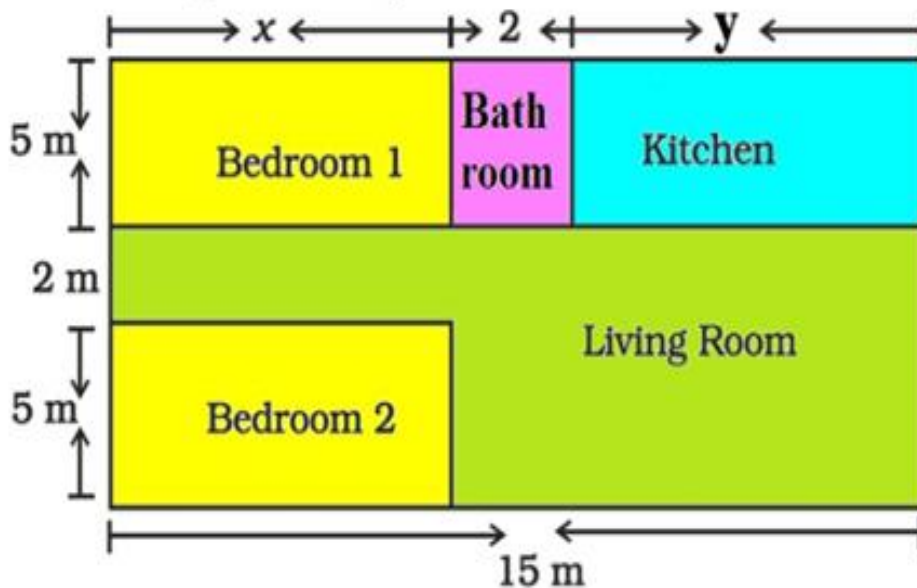
## FRENCH

Préparez une brochure touristique d'une des villes de la France avec les photos et les descriptions.

## MATHEMATICS

## CASE STUDY-1

In the below given layout, the design and measurements has been made such that area of two bedrooms and Kitchen together is 95 sq. m.



**Based on the above information, answer the following questions: (Attempt any four)**
(i) Form the pair of linear equations in two variables from this situation.
(ii) Find the length of the outer boundary of the layout.
(iii) Find the area of each bedroom and kitchen in the layout.
(iv) Find the area of living room in the layout.
(v) Find the cost of laying tiles in Kitchen at the rate of Rs. 50 per sq. m

## CASE STUDY-2

The production of TV sets in a factory increases uniformly by a fixed number every year. It produced 16000 sets in 6th year and 22600 in 9th year.



**Based on the above information, answer the following questions: (Attempt any four)**
(i) Find the production during first year.
(ii) Find the production during 8th year
(iii) Find the production during first 3 years.
(iv) In which year, the production is Rs. 29,200.
(v) Find the difference of the production during $7^{th}$ year and $4^{th}$ year.

## CASE STUDY-3

The department of Computer Science and Technology is conducting an International Seminar. In the seminar, the number of participants in Mathematics, Science and Computer Science are 60, 84 and 108 respectively. The coordinator has made the arrangement such that in each room, the same number of participants are to be seated and all of them being in the same subject. Also, they allotted the separate room for all the official other than participants.



**Based on the above information, answer the following questions: (Attempt any four)**
(i) Find the total number of participants.
(ii) Find the LCM of 60, 84 and 108.
(iii)Find the HCF of 60, 84 and 108.
(iv)Find the minimum number of rooms required, if in each room, the same number of participants are to be seated and all of them being in the same subject.
(v) Based on (iv) conditions, find the minimum number of rooms required for all the participants and officials.

## CASE STUDY-4

A student made a wooden pen stand which is in the shape of a cuboid with four conical depressions to hold pens. The dimensions of the cuboid are 15 cm by 10 cm by 3.5 cm. The radius of each of the depressions is 0.5 cm and the depth is 1.4 cm. Find the volume of wood in the entire stand (see the below figure).
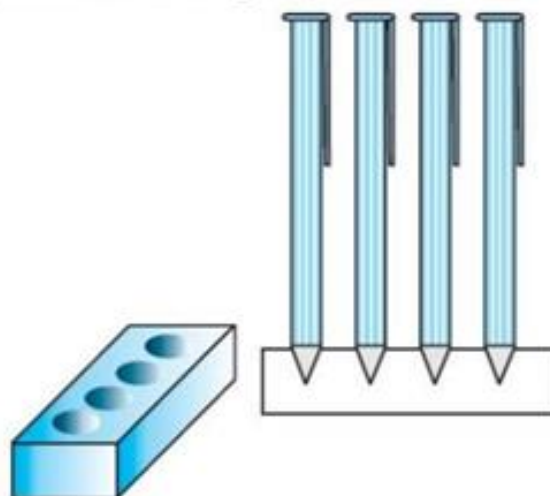


(a) What is the volume of cuboid?
   (i) 525 cm³ (ii) 225 cm³ (iii) 552 cm³ (iv) 255 cm³.

(b) What is the volume of cone?
   (i) $\frac{11}{3}$ cm³ (ii) $\frac{11}{30}$ cm³ (iii) $\frac{3}{11}$ cm³ (iv) $\frac{30}{11}$ cm³.

(c) What is the total volume of conical depressions?
   (i) 1.74 cm$^3$ (ii) 1.44 cm$^3$ (iii) 1.47 cm$^3$ (iv) 1.77 cm$^3$

(d) What is the volume of wood in the entire stand?
   (i) 522.35 cm$^3$ (ii) 532.53 cm$^3$ (iii) 523.35 cm$^3$ (iv) 523.53 cm$^3$

(e) The given problem is based on which mathematical concept?
   (i) Triangle (ii) Surface Areas & Volumes (iii) Height & Distances (iv) None of these

## CRITICAL THINKING QUESTIONS

## Shape Up

This hexagon is made of identical equilateral triangles (triangles with three equal sides). If you don't count rotations or reflections, then there are three different shapes you can make by joining four such triangles fully edge to edge. First, determine what these three shapes are. Next, figure out how to use two copies of each of them to make the hexagon. There's only one solution (not counting rotations and reflections).

## Rectangles

Subdivide this region along the grid lines into non-overlapping squares and rectangles. Each of these rectangles or squares must contain exactly one number that matches the number of small cells that make up its area. Can you draw the correct boundaries?

| 9 | | | | | | | | | 12 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 6 | 6 | | | |
| | | | | | 3 | | | | |
| | | | | | | | | | |
| | | | | | | | 2 | | |
| | | | | | 12 | | | | |
| | | 6 | | | | 6 | | | |
| 10 | | | | | | | | | 8 |

## Skyscrapers

This grid represents a bird's-eye view of a city's downtown core. Place a number from 1 to 5—representing a building's height in storeys—in each square so that no two buildings in any row or column have the same height. The numbers outside the grid tell you how many buildings are visible in the corresponding row or column to an observer looking in from that direction. Higher buildings block the view of lower ones behind them. Can you determine the heights of all 25 buildings?
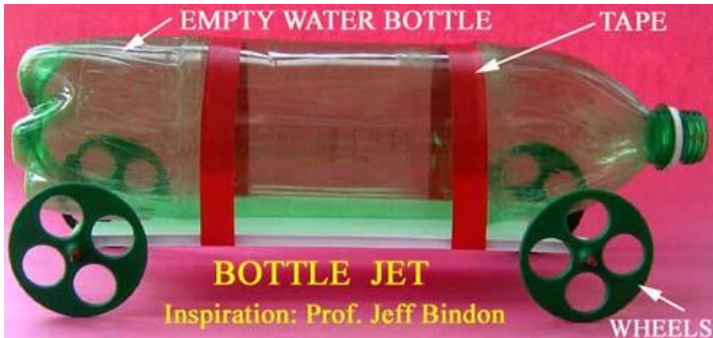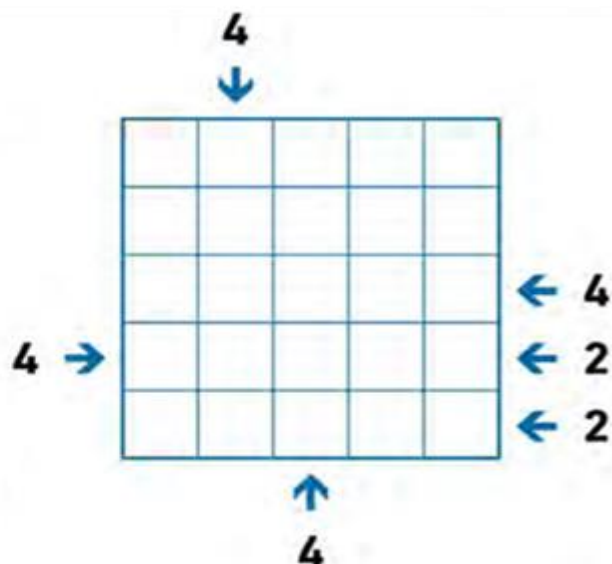
## It's A Process

There are nine steps to building a widget, but certain steps can only be started once other ones are finished. This process is diagrammed in the flow chart: if a line joins two circles, the circle on the left marks a step that must finish before the one on the right can begin. You have three workers, though not every worker is trained to perform every step. You've noted the length of time it takes each worker to complete each step they can do. If they started now, how soon could you have a brand new widget in your hands?
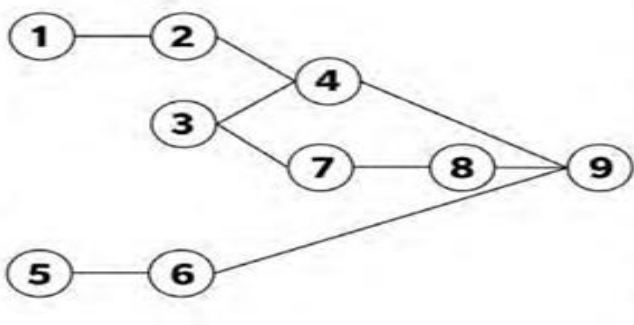
| | Andrea | Bill | Carla |
|---|---|---|---|
| 1 | 20 min | | 15 min |
| 2 | 10 min | | 15 min |
| 3 | | 20 min | 15 min |
| 4 | 30 min | 20 min | |
| 5 | | 30 min | 25 min |
| 6 | | 10 min | 15 min |
| 7 | 40 min | | 35 min |
| 8 | 10 min | 20 min | |
| 9 | 20 min | 10 min | 15 min |

## PHYSICS

| S.no | Description | Learning Outcomes/Skill enhanced |
|---|---|---|
| 1. | **The Newtonian Toy:** Design a toy using waste materials which describes any one or more laws of Motion given by Newton.  | Students will be able to apply Newton's Laws of Motion in real life and acquire following skills <br><br> • Critical Thinking <br> • Creativity <br> • Real life application of concepts. |
| 2. | Solve the assignment for the Month of April & May. (Assignments will be uploaded on google classroom) | |

## CHEMISTRY

Q1. Write the relation between 1mole of an element and Avogadro Constant.

Q2. Give the meaning of the Latin word 'mole'.

Q3. What do the following abbreviation stand for-

   a) H      b)2H      c)$H_2$   d) $3H_2$      e) He    f)$H^+$

Q4. Calculate the **number of particles** in each of the following:

   a)46 grams of Na(sodium) atom          b) 80 of $O_2$                c) 0.1 mole of carbon atoms

   d)0.8 grams of hydrogen              e) 0.08 grams of Sulphur

   **(Atomic masses: H=1 , S=32 , Fe=56 , Na=23 ,O=16)**

Q5. Write the Chemical formula of following compound with the help of valence method-

   a) Nitrogen Oxide          b) Calcium Nitride       c) Hydrogen Chloride

Q6. Calculate the mass of **$3.011 \times 10^{23}$** atoms of carbon?

Q7. Explain what is **Thomson Model** of an atom?

Q8. What do you understand by the terms– Atomic mass of an element & Molecular mass of compound?

Q9. Calculate the **molecular masses** of the following-

   a) $CH_3COOH$          b) $C_2H_5OH$                c) $CO_2$                d) $O_3$

Q10. What conclusions were made by Rutherford in his gold foil experiment?


## BIOLOGY

- Prepare a model of Carbon cycle (Even roll numbers) and Nitrogen cycle (Odd roll numbers) using common household items like grains and pulses etc. to be assessed as subject enrichment activity.

- Do NCERT questions of Chapter: Cell the fundamental unit of life, Tissue and Why do we fall ill. [in Biology notebook]

- Consider a cell like your school. Each part of the cell (school) has responsibilities that must be done and certain organelles (people) to do them. Identify the functions of the following parts of the cell then identify which person does the same job.

   First one is done as an example to follow:

| S. N. | ORGANELLE | FUNCTION | PART OF SCHOOL THAT HAS A SIMILAR FUNCTION |
|-------|-----------|----------|---------------------------------------------|
| 1. | Cell Membrane | Controls what goes in and out of the cell | Front office |
| 2. | Mitochondria | | |
| 3. | Nucleus | | |
| 4. | Ribosome | | |
| 5. | Cytoplasm | | |
| 6. | Golgi Body | | |
| 7. | Cell Wall (only in plant cell) | | |
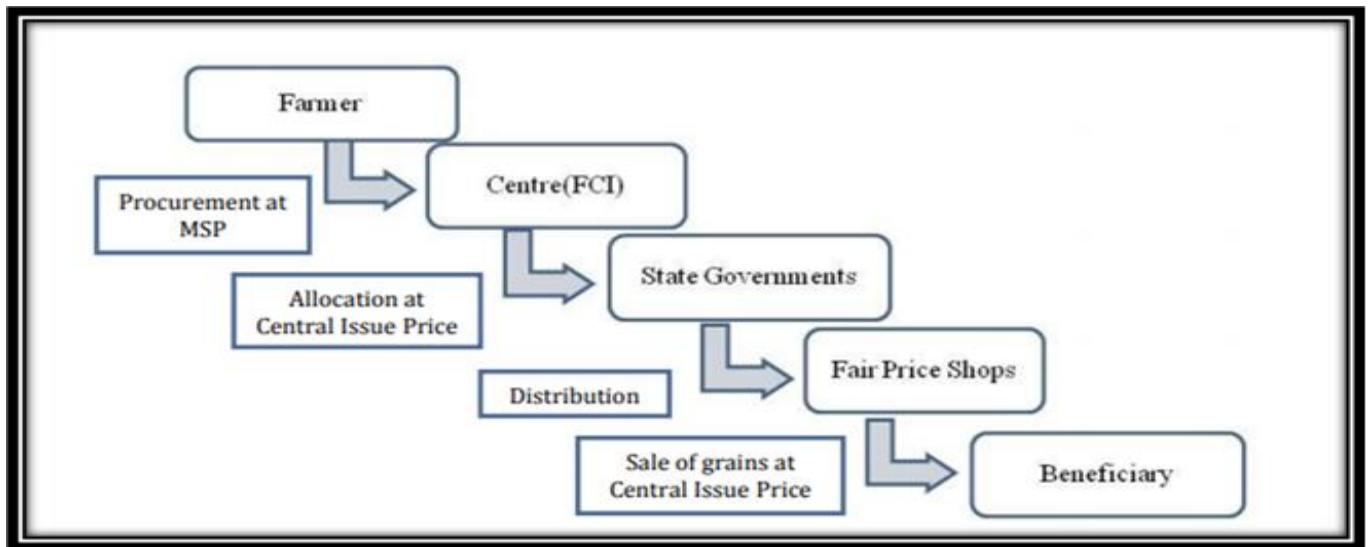
## PUBLIC DISTRIBUTION SYSTEM IN INDIA

The Public Distribution System of India plays a crucial role in reducing food insecurity by acting as a safety net by distributing essentials at a subsidized rate.

Answer the following questions:

Q (i) Which state in the Public Distribution of food grains system is responsible for the reduction in poverty in India?

Q (ii) Give any three advantages of the PDS for the farmers in India.
     (Answer in 60-80 words.)

Q (iii) Efficient PDS in a state minimizes poverty. Elaborate the statement.
      (Answer in 60-80 words.)

   (All answers to be written in the Economics note book.)

## History/ Democratic Politics

India is a Democratic country. Fundamental Rights like Right to Equality, Freedom of Speech & Expression etc. are the soul of Indian Constitution. Then, Why Arnab Goswami's arrest puts India's long-cherished freedom of speech in danger?



Write an article (150-200 words) expressing your views about the same. Also support your article with handmade cartoon illustrations.

## GEOGRAPHY

By referring the chapter 'Climate', write an article on **'India's winter is colder this year'.** The article should be well researched. Maps and temperature data can be used to analysis the concept. (not more than 300 words).

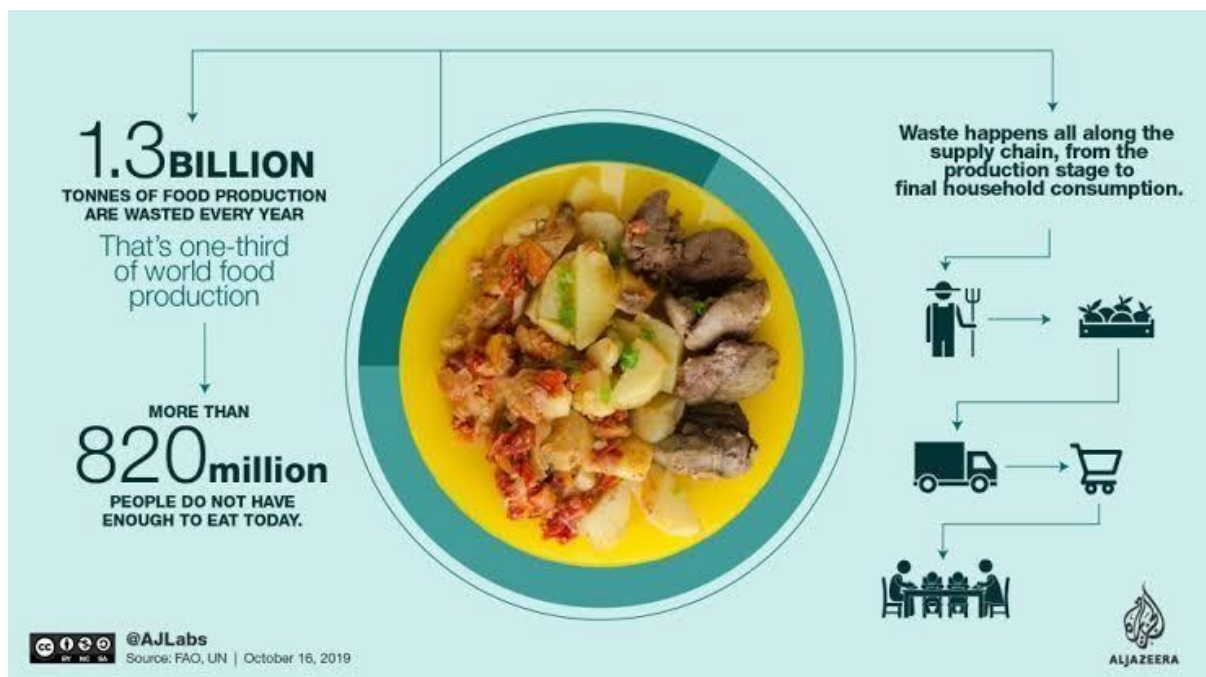## BASICS OF MONEY MANAGEMENT

### Practical Activity
Complete 15 lessons of Numeric Key Accelerator (four levels)



Complete 15 lessons of Functions key Accelerator (four levels)

## ARTIFICIAL INTELLIGENCE



Humans are social animals. We tend to organise and/or participate in various kinds of social gatherings all the time. We love eating out with friends and family because of which we can find restaurants almost everywhere and out of these, many of the restaurants arrange for buffets to offer a variety of food items to their customers. Be it small shops or big outlets, every restaurant prepares food in bulk as they expect a good crowd to come and enjoy their food. But in most cases, after the day ends, a lot of food is left which becomes unusable for the restaurant as they do not wish to serve stale food to their customers the next day. So, every day, they prepare food in large quantities keeping in mind the probable number of customers walking into their outlet. But if the expectations are not met, a good amount of food gets wasted which eventually becomes a loss for the restaurant as they either have to dump it or give it to hungry people for free. And if this daily loss is taken into account for a year, it becomes quite a big amount.

Draw the System map for the given case study using the software Loopy
Identify the problem statement