



KENDRIYA VIDYALAYA SANGATHAN NO.1 INDORE

Summer Holiday Homework

Class 6th Homework

Subject: English

Summer Vacation Holiday Homework 2023

Class: 6th

Subject: English

1. Read at least two pages of textbook every day.
2. Read an English book and attempt it's *Book Review* on following points :
 - A. Draw cover page of the book with title and author name
 - B. No. Of pages
 - C. Price of book
 - D. Name of publisher
 - E. Summary of story
 - F. Main characters
 - G. My impression about the book
3. Write any two panchtantra story .Also draw pictures related to them.
4. Listen to English news daily.
5. Solve 10 word puzzles

L. Sudhakar

Subject: Hindi

केन्द्रीय विद्यालय इंदौर द्वितीय पाली

ग्रीष्मकालीन अवकाश गृह कार्य

विषय-हिन्दी ,

कक्षा - 6

निर्देश:-सभी विद्यार्थी यह कार्य ग्रीष्मकालीन अवकाश में करेंगे।

1. चिड़िया के अलावा आपको कौन - सा पक्षी अच्छा लगता है ?

उसका चित्र बनाइए।

2. आपके आसपास खाने में कौन - कौन से व्यंजन प्रचलित हैं

उनकी सूची बनाइए।

3. अपने बचपन की कोई मनमोहक घटना को विस्तार से लिखिए।

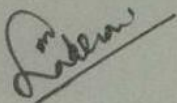
4. केशव और श्यामा की तरह आपको किसके बारे में जानने की

इच्छा है और क्यों ?

5. अपनी बड़ी बहन को गर्मी की छुट्टियां बिताते हुए पत्र लिखिए।

6. बाल रामकथा के आधार पर राम-लक्ष्मण की विशेषताएं लिखिए।

7. सर्वनाम शब्दों का प्रयोग करते हुए 5 वाक्य बनाइए।



Subject: Mathematics

PRACTICE QUESTIONS
CLASS - VI: CHAPTER - 1
KNOWING OUR NUMBERS

1. Find the greatest and the smallest numbers.
(a) 4536, 4892, 4370, 4452.
(b) 15623, 15073, 15189, 15800.
(c) 25286, 25245, 25270, 25210.
(d) 6895, 23787, 24569, 24659.
2. Use the given digits without repetition and make the greatest and smallest 4-digit numbers.
(a) 2, 8, 7, 4 (b) 9, 7, 4, 1 (c) 4, 7, 5, 0 (d) 1, 7, 6, 2 (e) 5, 4, 0, 3
3. Arrange the following numbers in ascending order :
(a) 847, 9754, 8320, 571 (b) 9801, 25751, 36501, 38802
4. Arrange the following numbers in descending order :
(a) 5000, 7500, 85400, 7861 (b) 1971, 45321, 88715, 92547
5. Place commas correctly and write the numerals:
(a) Seventy three lakh seventy five thousand three hundred seven.
(b) Nine crore five lakh forty one.
(c) Seven crore fifty two lakh twenty one thousand three hundred two.
(d) Fifty eight million four hundred twenty three thousand two hundred two.
(e) Twenty three lakh thirty thousand ten.
6. Insert commas suitably and write the names according to Indian System of Numeration :
(a) 87595762 (b) 8546283 (c) 99900046 (d) 98432701
7. Insert commas suitably and write the names according to International System of Numeration :
(a) 78921092 (b) 7452283 (c) 99985102 (d) 48049831
8. A box contains 2,00,000 medicine tablets each weighing 20 mg. What is the total weight of all the tablets in the box in grams and in kilograms?
9. Population of Sundarnagar was 2,35,471 in the year 1991. In the year 2001 it was found to be increased by 72,958. What was the population of the city in 2001?
10. In one state, the number of bicycles sold in the year 2002-2003 was 7,43,000. In the year 2003-2004, the number of bicycles sold was 8,00,100. In which year were more bicycles sold? and how many more?
11. The town newspaper is published every day. One copy has 12 pages. Everyday 11,980 copies are printed. How many total pages are printed everyday?
12. The number of sheets of paper available for making notebooks is 75,000. Each sheet makes 8 pages of a notebook. Each notebook contains 200 pages. How many notebooks can be made from the paper available?
13. A machine, on an average, manufactures 2,825 screws a day. How many screws did it produce in the month of January 2006?



PRACTICE QUESTIONS
CLASS - VI: CHAPTER - 2
WHOLE NUMBERS

1. Find $4 + 5$; $2 + 6$; $3 + 5$ and $1 + 6$ using the number line.
2. Find $8 - 3$; $6 - 2$; $9 - 6$ using the number line.
3. Write the successor of : (a) 2440701 (b) 100199 (c) 1099999 (d) 2345670
4. Write the predecessor of : (a) 94 (b) 10000 (c) 208090 (d) 7654321
5. Find : $7 + 18 + 13$; $16 + 12 + 4$
6. Find : $25 \times 8358 \times 4$; $625 \times 3759 \times 8$
7. Find 15×68 ; 17×23 ; $69 \times 78 + 22 \times 69$ using distributive property.
8. Simplify: $126 \times 55 + 126 \times 45$
9. A taxidriver filled his car petrol tank with 40 litres of petrol on Monday. The next day, he filled the tank with 50 litres of petrol. If the petrol costs Rs 44 per litre, how much did he spend in all on petrol?
10. A vendor supplies 32 litres of milk to a hotel in the morning and 68 litres of milk in the evening. If the milk costs Rs 15 per litre, how much money is due to the vendor per day?
11. Find the value of the following:
(a) $297 \times 17 + 297 \times 3$ (b) $54279 \times 92 + 8 \times 54279$
(c) $81265 \times 169 - 81265 \times 69$ (d) $3845 \times 5 \times 782 + 769 \times 25 \times 218$
12. Find the product using suitable properties.
(a) 738×103 (b) 854×102 (c) 258×1008 (d) 1005×168
13. Find using distributive property :
(a) 728×101 (b) 5437×1001 (c) 824×25 (d) 4275×125 (e) 504×35
14. Find the sum by suitable rearrangement:
(a) $837 + 208 + 363$ (b) $1962 + 453 + 1538 + 647$
15. Find the product by suitable rearrangement:
(a) $2 \times 1768 \times 50$ (b) $4 \times 166 \times 25$ (c) $8 \times 291 \times 125$
(d) $625 \times 279 \times 16$ (e) $285 \times 5 \times 60$ (f) $125 \times 40 \times 8 \times 25$
16. A dealer purchased 139 VCRs. If the cost of each set is Rs 14350, find the cost of all the sets together.
17. A housing society constructed 397 houses. If the cost of construction for each house is Rs. 325000, what is the total cost for all the houses?
18. Using distributive property, find the following product?
(a) 937×105 (b) 346×1007 (c) 947×96 (d) 996×267
19. 50 chairs and 30 blackboards were purchased for a school. If each chair costs Rs. 165 and a blackboard costs Rs. 445, find the total amount of the bill.
20. The product of two whole numbers is zero. What do you conclude.

$$\sqrt{\frac{6561}{65536}} \quad (17^2 - 8^2)^{\frac{1}{2}}$$

MCU WORKSHEET I-1
CLASS - VI: CHAPTER - 2
WHOLE NUMBERS

1. What is the predecessor of 17
(a) 16 (b) 18 (c) 0 (d) 17
2. Write the successor of 1997
(a) 1996 (b) 1997 (c) 1998 (d) none of these
3. Which is the smallest whole number
(a) 1 (b) 0 (c) 2 (d) -1
4. Divide $7 \div 0$
(a) 7 (b) 0 (c) not defined (d) 1
5. Find value of $297 \times 17 + 297 \times 3$
(a) 5940 (b) 5980 (c) 5942 (d) 5970
6. Which of the following will not represent 0
(a) $1+0$ (b) 0×0 (c) $0/2$ (d) $(10-10)/2$
7. If the product of two whole numbers is one if
(a) one number is 1 (b) two numbers are 1 (c) not defined (d) none of these
8. Smallest natural number is
(a) -1 (b) 1 (c) 0 (d) 2
9. Simplify $126 \times 55 + 126 \times 45$
(a) 12000 (b) 12400 (c) 12600 (d) 12500
10. (i) If the product of two whole numbers is zero then one number will be zero
(ii) If the product of two whole numbers is zero then both number will be zero
(a) Only I can be true (b) only II can be true (c) Both can be true (d) both are false
11. Study the pattern $1 \times 8 + 1 = 9$
 $12 \times 8 + 2 = 98$
Next step is-
(a) $123 \times 8 + 3 = 987$ (b) $1234 \times 8 + 4 = 9876$ (c) $120 \times 8 + 3 = 963$ (d) $13 \times 8 + 3 = 987$
12. Fill in the blanks to make the statement true
 $6245 + (631 + 751) = 631 + \dots + 751$
(a) 6245 (b) 751 (c) 200 (d) 231
13. 5 divided by 0 is
(a) 5 (b) 0 (c) 1 (d) not defined
14. 0 divided by 6 is
(a) 6 (b) 0 (c) 1 (d) 60
15. Write the correct number to complete:
 $13 \times 100 \times \dots = 1300000$
(a) 10 (b) 1000 (c) 10000 (d) 100



Subject: Science

Summer Holiday Homework
Class 6th
Subject – Science

Solve all the questions in HW notebook except Q.2

- Q.1. Prepare Your Own Balanced diet chart of one month (30 days) in your HW copy
- Q.2. Prepare a hand written project on any one topic of your science book.
- Q.3. Name the two substance which are the richest source of carbohydrate.
- Q.4. Name the Vitamin whose main source is citrus fruits.
- Q.5. How can you test presence of protein in a food item?
- Q.6. Name the disease caused by deficiency of vitamin D.
- Q.7. What are the functions of water in our body?
- Q.8. What are the similarities between iron, copper, aluminium?
- Q.9. Describe an experiment showing that material is soluble.
- Q.10. Describe an experiment showing that material is insoluble.

Prisha

Prisha

Subject : Social Science

1/1

Class 6

Summer Holiday Homework KV No. 1 Indore shift 2

1. Locate all states with their capitals on the outline map of India and paste in homework notebook.
2. paste the Pictures of these monument and write some important features about it- Sanchi Stupa, Ajanta cave, Ashok Stambh(pillar)
3. Draw a picture on "unity in diversity".
4. Learn and write question answers and exercise in homework notebook chapter one geography chapter one history.

Q.S.

Kavita,
26/4/23

V.P.

Subject: Computer

Class 6

- Q.1) Prepare a chart on the topic "Generation of computer" in MS Word .
- Q.2) Prepare a chart in MS Word on topic basic components of computer.
- Q.3) Collect pictures of different types of input devices paste them and explain briefly.
- Q.4) Collect the pictures of different types of printers, paste and explain them briefly.
- Q.5) Write names and explain different types of computer languages.
- Q.6) Write Software definition and its types.
- Q.7) Prepare a chart on the topic "Computer memory".

Sub-Teacher :- Munish .
Adarsh

Subject: Sanskrit

ग्रीष्मकालीन अवकाश गृहकार्य

class 6

- 1 बालक , बालिका , पुष्प शब्द रूप लिखकर याद कीजिए ।
- 2 कोई भी 8 नीति परक श्लोक अर्थ सहित लिखकर याद कीजिए ।
- 3 पठ् धातु के पांचों लकारों में रूप लिखकर याद कीजिए ।
- 4 10 पशु , 10 रंग , 10 घरेलू वस्तु , 10 रसोई घर की चीजों , 10 विद्यालय संबंधी शब्दों को हिन्दी और संस्कृत में लिखिए ।
- 5 एक संस्कृत गीत और एक संस्कृत कथा लिखकर याद कीजिए ।
- 6 1 - 100 तक संस्कृत में संख्या लिखकर याद कीजिए ।
- 7 5 पेज संस्कृत में सुलेख कीजिए ।

रिश्मा

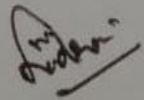
Class 7th Holiday Homework

Subject: English

Class: 7th

Subject: English

1. Read at least three pages of textbook every day.
2. Read an English book and attempt it's *Book Review* on following points :
 - A. Draw cover page of the book with title and author name
 - B. No. Of pages
 - C. Price of book
 - D. Name of publisher
 - E. Summary of story
 - F. Main characters
 - G. My impression about the book
3. Write short paragraphs on :
 - Books are the best friends
 - Avoid junk food
 - Importance of Yoga
4. Listen to English news daily.
5. Solve 10 word puzzles
6. Make a collage on Life in Desert



Subject: Hindi

विषय - हिन्दी , कक्षा - 7

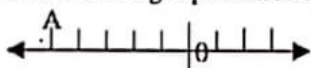
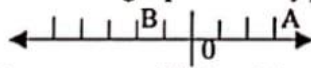
निर्देश:- सभी विद्यार्थी यह कार्य ग्रीष्मकालीन अवकाश में करेंगे।

1. शहरीकरण से पर्यावरण किस प्रकार प्रभावित होता है 10 पंक्तियां लिखिए
2. सावन, कार्तिक, फाल्गुन में कौन-कौन से त्योहार आते हैं किसी एक पर अनुच्छेद लिखिए
3. आपके आसपास पर्यटक स्थलों की जानकारी एकत्रित करके लिखिए
4. नदियों से हमें क्या क्या लाभ होते हैं 10 पंक्तियां लिखिए
5. आपके आसपास में गंदगी होने पर सफाई के लिए नगरपालिका अध्यक्ष को एक प्रार्थना पत्र लिखिए।
6. बाल महाभारत की कथा के आधार पर भीष्म की विशेषताएं लिखिए ।
7. पाठ्यपुस्तक से द्वंद समास के 10 उदाहरण खोजकर लिखिए।



Subject: Mathematics

MCQ WORKSHEET-II
CLASS – VII: CHAPTER – 1
INTEGERS

1. Which of the following number is greater than -1 ?
(a) -2 (b) -10 (c) 0 (d) -3
2. The preceding number of -1 on number line is:
(a) 0 (b) 1 (c) 2 (d) -2
3. Which number is 5 more than -3 ?
(a) -2 (b) 2 (c) 8 (d) -8
4. 7 steps to the left of 4 on number line gives:
(a) 3 (b) 11 (c) -11 (d) -3
5. 2 steps to the right of -1 on number line gives:
(a) 0 (b) 1 (c) -3 (d) 3
6. Which number is being represented by the point A on following number line:

(a) -9 (b) 5 (c) -5 (d) -6
7. What number is being represented by points A and B respectively on the number line:

(a) 3 and 2 (b) 2 and 3 (c) -3 and -2 (d) 3 and -2
8. The integer succeeding -9 is:
(a) -10 (b) 10 (c) -8 (d) 8
9. What will be the opposite of 3 Km south?
(a) 3 km east (b) 3 km north (c) 3 km north east (d) 3 km west
10. Which of the following set of numbers is in descending orders?
(a) $2, -2, 1, -1$ (b) $0, 1, 2, 3$ (c) $1, 0, -1, -2$ (d) $-3, -2, -1, 0$
11. Which of the following statements is false:
(a) 0 lies to the left of -1 (b) 2 lies to the right of 1
(c) 1 lies to the right of 0 (d) -2 lies to the left of -1
12. 5 added to the -1 gives
(a) 4 (b) -4 (c) 6 (d) -6



WORKSHEET I-III
CLASS - VII: CHAPTER - 1
INTEGERS

1. 7 added to -1 gives
(a) 6 (b) -6 (c) -8 (d) 8
2. 3 added to -3 gives
(a) 0 (b) 6 (c) -6 (d) 9
3. 1 subtracted from -1 gives
(a) 0 (b) -1 (c) -2 (d) 2
4. Sum of -10 , -5 and 12 is
(a) 27 (b) -3 (c) 3 (d) -27
5. Which of the following statements is false
(a) $-4 > -5$ (b) $-4 < 5$ (c) $4 < -5$ (d) $4 > -5$
6. Which of the following is in increasing order
(a) $0, 1, -1$ (b) $-1, -2, -3$ (c) $-1, 0, 1$ (d) $-1, 1, -2$
7. Which of the following is correct
(a) $-8 > -7$ (b) $1 < 0$ (c) $-1 < 0$ (d) $-2 > 4$
8. Which of the following number forms a pattern
(a) $-6, -3, 0, 3$ (b) $-5, -3, -2, 0$ (c) $0, 2, 3, 4$ (d) $1, 2, 4, 6$
9. Sum of -36 and 29 is
(a) -65 (b) 65 (c) -7 (d) 7
10. Which of the following will give answer with negative sign
(a) $-48 + 79$ (b) $-40 + 40$ (c) $-48 + 30$ (d) $48 + (-39)$
11. What will be the additive inverse of -1 ?
(a) -2 (b) -1 (c) 0 (d) 1
12. Sum of two positive integers is always-
(a) Negative (b) positive (c) 0 (d) 1
13. Sum of a negative and a positive integer is -
(a) Always negative (b) either positive or negative (c) always positive (d) Zero
14. The pair of integers whose sum is -5
(a) $1, -4$ (b) $-1, 6$ (c) $-3, -2$ (d) $5, 0$
15. $39 - 50$ is
(a) Not possible (b) -89 (c) -11 (d) 10



Adm.

PRACTICE QUESTIONS
CLASS – VII: CHAPTER – 1
INTEGERS

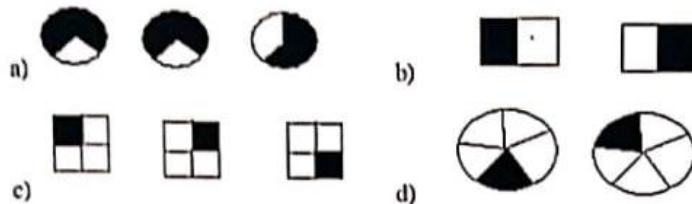
1. Write the opposite of each of the following:
(i) Increase in class strength (ii) going north (iii) A loss of Rs 1000
2. Indicate the following by integers:
(i) 25° above zero (ii) 5° below zero (iii) 300m above the sea level
(iv) 250m below the sea level (v) A profit of Rs. 2000
3. Represent the following integers on number line:
(i) -4 (ii) 7 (iii) -8
4. Write all the integers between:
(i) -7 and 3 (ii) -2 and 2 (iii) -4 and 0
5. How many integers are between:
(i) -4 and 3 (ii) 5 and 12 (iii) -9 and -2
6. Represent the following using integers with proper sign: (a) 3 km above sea level (b) A loss of Rs 500
7. Find the sum of the pairs of integers: (a) -6, -4 (b) +3, -4 (c) +4, -2
8. Find the sum of -2 and -3, using the number line.
9. Subtract : (i) 3 from -4 (ii) -3 from -4
10. Using the number line, subtract : (a) 2 from -3 (b) -2 from -3.
11. How many integers are there between -9 and -2 ?
12. Calculate: $1 - 2 + 3 - 4 + 5 - 6 + 7 - 8 + 9 - 10$
13. The sum of two integers is 47. If one of the integers is -24, find the other.
14. Write the digits 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 in this order and insert '+' or '-' between them to get the result (a) 5 (b) -3
15. Compute each of the following:
(a) $30 + (-25) + (-10)$ (b) $(-20) + (-5)$
(c) $70 + (-20) + (-30)$ (d) $-50 + (-60) + 50$
(e) $1 + (-2) + (-3) + (-4)$ (f) $0 + (-5) + (-2)$
(g) $0 - (-6) - (+6)$ (h) $0 - 2 - (-2)$
16. If we denote the height of a place above sea level by a positive integer and depth below the sea level by a negative integer, write the following using integers with the appropriate signs:
(a) 200 m above sea level (b) 100 m below sea level
(c) 10 m above sea level (d) sea level



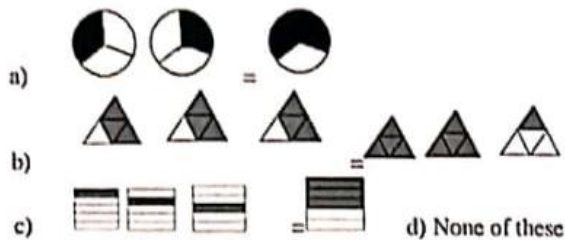
MCQ WORKSHEET-II
CLASS - VII: CHAPTER - 2
FRACTIONS AND DECIMALS

1. What is the value of $\frac{4}{5} - \frac{2}{3}$
- a) $\frac{2}{2}$ b) $\frac{14}{15}$ (c) $\frac{2}{15}$ (d) none of these

2. Which of the following drawing shows $2 \times \frac{1}{5}$



3. Which of the following drawing shows $3 \times \frac{3}{4} = 2\frac{1}{4}$



4. The value of $\frac{1}{2}$ of 24 is

- a) 12 b) $\frac{1}{12}$ (c) 48 (d) $\frac{1}{48}$

5. The product of $\frac{3}{4}$ and $\frac{1}{5}$ gives

- (a) $\frac{3}{20}$ (b) $\frac{5}{12}$ (c) $\frac{12}{5}$ (d) $\frac{20}{3}$

6. Which of the following product gives the value $\frac{78}{5}$

- (a) $3 \times 5\frac{1}{5}$ (b) $\frac{1}{3}$ (c) $3 \times \frac{5}{26}$ (d) None of these

7. The product of $\frac{2}{5} \times 5\frac{1}{4}$ gives

- (a) $\frac{1}{2}$ (b) $\frac{21}{10}$ (c) $\frac{11}{10}$ (d) $\frac{15}{10}$



ind 3 Subtract $\frac{1}{6}$ from $\frac{1}{2}$.

16. Subtract $8\frac{1}{3}$ from $\frac{100}{9}$.

17. Subtract $1\frac{1}{4}$ from $6\frac{1}{2}$.

18. Add $1\frac{1}{4}$ and $6\frac{1}{2}$.

19. Katrina rode her bicycle $6\frac{1}{2}$ km in the morning and $8\frac{3}{4}$ km in the evening. Find the distance travelled by her altogether on that day.

20. A rectangle is divided into certain number of equal parts. If 16 of the parts so formed represent the fraction $\frac{1}{4}$, find the number of parts in which the rectangle has been divided.

21. Grip size of a tennis racquet is $11\frac{9}{80}$ cm. Express the size as an improper fraction.

22. Mr. Rajan got a job at the age of 24 years and he got retired from the job at the age of 60 years. What fraction of his age till retirement was he in the job?

23. On an average $\frac{1}{10}$ of the food eaten is turned into organism's own body and is available for the next level of consumer in a food chain. What fraction of the food eaten is not available for the next level?

24. The food we eat remains in the stomach for a maximum of 4 hours. For what fraction of a day, does it remain there?

25. It was estimated that because of people switching to Metro trains, about 33000 tonnes of CNG, 3300 tonnes of diesel and 21000 tonnes of petrol was saved by the end of year 2007. Find the fraction of : (i) the quantity of diesel saved to the quantity of petrol saved. (ii) the quantity of diesel saved to the quantity of CNG saved.

26. A cup is $\frac{1}{3}$ full of milk. What part of the cup is still to be filled by milk to make it full?

27. Mary bought $3\frac{1}{2}$ m of lace. She used $1\frac{3}{4}$ m of lace for her new dress. How much lace is left with her?

28. Sunil purchased $12\frac{1}{2}$ litres of juice on Monday and $14\frac{3}{4}$ litres of juice on Tuesday. How many litres of juice did he purchase together in two days?

PRACTICE QUESTIONS
CLASS – VII: CHAPTER – 2
FRACTIONS AND DECIMALS

1. Fill in the blanks:

(a) $\frac{11}{16} \dots \frac{14}{15}$ (b) $\frac{8}{15} \dots \frac{95}{14}$ (c) $\frac{12}{75} \dots \frac{32}{200}$

2. Ali divided one fruit cake equally among six persons. What part of the cake he gave to e person?

3. Express $\frac{11}{20}$ as a decimal.

4. Express $6\frac{2}{3}$ as an improper fraction.

5. Express $3\frac{2}{5}$ as a decimal.

6. Express 0.041 as a fraction.

7. Express 6.03 as a mixed fraction.

8. Arrange the fractions $\frac{2}{3}, \frac{3}{4}, \frac{1}{2}$ and $\frac{5}{6}$ in ascending order

9. Arrange the fractions $\frac{6}{7}, \frac{7}{8}, \frac{4}{5}$ and $\frac{3}{4}$ in descending order.

10. Write $\frac{3}{4}$ as a fraction with denominator 44

11. Write $\frac{5}{6}$ as a fraction with numerator 60

12. Write $\frac{129}{8}$ as a mixed fraction.

13. Add the fractions $\frac{3}{\alpha}$ and $\frac{2}{\alpha}$.

Subject: Science

Kendriya Vidyalaya (Shift II)
Summer Holiday Homework
Class -7th
SCIENCE

All the questions are compulsory. Draw neat and labelled diagrams where necessary.

1. Prepare a 3-D model of digestive system of Human being.
2. Make a table on "Types Of Vitamins and deficiency diseases caused by it".
3. Prepare a chart on "name of organs of digestive system, its function, chemicals or enzyme action".
4. Make a beautiful album showing different modes of nutrition in plants, also write a paragraph on each mode. Paste/Draw relevant picture of examples of each type.
5. Write an essay on photosynthesis, essential condition and its importance.
6. Give reasons-
 - A) Why a male mosquito is not considered a parasite (blood sucker)?
 - B) Do plants absorb carbon dioxide at night?

Writ

Signature

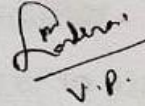
Class 7

Summer Holiday Homework KV No. 1 Indore shift 2

1. Locate all states with their capitals on the outline map of India and paste in homework notebook.
2. Paste the pictures of these monuments and write 5 features about them.
Red Fort, Taj Mahal, khajuraho temple golden temple
3. Make one poster on women empowerment.
4. Learn and write question answers and exercise in homework notebook chapter one geography chapter one history.



Kavita
26/4/23


v.p.

Subject: Social Science

Class 7

Q.1) Write short notes on

- I. Computer Security
- II. Computer Virus
- III. Antivirus
- IV. Cyber crime
- V. Cyber law

Q.2) Prepare a chart of different types of computer virus.

Q.3) What is firewall? Write its uses.

Q.4) What do you mean by computer ethics? Write different kind of ethical issues.

Q.5) Write difference between hackers and crackers.

Q.6) What do you mean by backup and restore? Write the steps to backup a file.

Sub-teacher:-
Mishra
Ravi

Subject: Computer

Subject: Sanskrit

Class 7

- 1 1 बालक, बालिका, पुष्प शब्द रूप लिखकर याद कीजिए ।
- 2 कोई भी 8 नीति परक श्लोक अर्थ सहित लिखकर याद कीजिए ।
- 3 पठ् धातु के पांचों लकारों में रूप लिखकर याद कीजिए ।
- 4 10 पशु, 10 रंग, 10 घरेलू वस्तु, 10 रसोई घर की चीजों, 10 विद्यालय संबंधी शब्दों को हिन्दी और संस्कृत में लिखिए ।
- 5 एक संस्कृत गीत और एक संस्कृत कथा लिखकर याद कीजिए ।
- 6 1 - 100 तक संस्कृत में संख्या लिखकर याद कीजिए ।
- 7 5 पेज संस्कृत में सुलेख कीजिए ।

Ravi

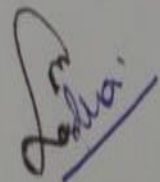
Ravi

Summer Vacation Holiday Homework 2023

Class: 8th

Subject: English

1. Read at least four pages of textbook every day.
2. Read an English book and attempt it's *Book Review* on following points :
 - A. Draw cover page of the book with title and author name
 - B. No. Of pages
 - C. Price of book
 - D. Name of publisher
 - E. Summary of story
 - F. Main characters
 - G. My impression about the book
3. Write any two ENGLISH stories .Also draw pictures related to them.
4. Listen to English news daily.
5. Solve 10 word puzzles
6. Make a diary entry on how you spent your vacation.
7. Make a collage on the freedom fighters of our country.



Class 8th Holiday Homework

Subject: English

केन्द्रीय विद्यालय

शीष्मकालीन अवकाश गृह कार्य

विषय - हिन्दी, कक्षा - 8

निर्देश:- सभी विद्यार्थी यह कार्य शीष्मकालीन अवकाश में करेंगे।

- 1 वसंत ऋतु में आने वाले त्योहारों की सूची बनाकर किसी 1 पर अनुच्छेद लिखिए।
- 2 आपके मनपसंद कविता की कोई चार पंक्तियां लिखिए।
- 3 आपको छुट्टियों में किसके घर जाना अच्छा लगता है और क्यों ?
- 4 आज भी बाजार में हाथ से बनी हुई चीजें मिलती हैं उनकी सूची बनाइए।
- 5 यदि बस जीवित प्राणी होती और वह बोल सकती तो वह अपना कष्ट किन शब्दों में व्यक्त करती
- 6 किसी यात्रा में जाते समय की तैयारी का वर्णन अपने शब्दों में लिखिए।
- 7 अपने मित्र को जन्मदिन की शुभकामना देते हुए एक पत्र लिखिए।
- 8 भारत की खोज पुस्तक के लेखक पंडित जवाहरलाल नेहरू के जीवन पर सचित्र लेख लिखिए।



Subject : Hindi

Subject: Mathematics

CLASS VIII: CHAPTER - 1
RATIONAL NUMBERS

1. Find $\frac{3}{7} + \left(\frac{-6}{11}\right) + \left(\frac{-8}{21}\right) + \frac{5}{22}$
2. Find $\frac{-4}{5} \times \frac{3}{7} \times \frac{15}{16} \times \left(\frac{-14}{9}\right)$
3. Find using distributive property: (i) $\left\{\frac{7}{5} \times \left(\frac{-3}{12}\right)\right\} + \left\{\frac{7}{5} \times \frac{5}{12}\right\}$ (ii) $\left\{\frac{9}{16} \times \frac{4}{12}\right\} + \left\{\frac{9}{16} \times \frac{-3}{9}\right\}$
4. Find $\frac{2}{5} \times \frac{-3}{7} - \frac{1}{14} - \frac{3}{7} \times \frac{3}{5}$
5. Simplify: $\frac{-4}{5} \times \frac{3}{7} \times \frac{15}{16} \times \left(\frac{-14}{9}\right)$
6. Multiply $\frac{6}{13}$ by the reciprocal of $\frac{-7}{16}$.
7. What number should be added to $\frac{7}{12}$ to get $\frac{4}{15}$?
8. What number should be subtracted from $-\frac{3}{5}$ to get -2 ?
9. Is $\frac{8}{9}$ the multiplicative reciprocal of $-1\frac{1}{8}$? Why or why not?
10. Is 0.3 the multiplicative reciprocal of $3\frac{1}{3}$? Why or why not?
11. Write any 3 rational numbers between -2 and 0 .
12. Find any ten rational numbers between $-\frac{5}{6}$ and $\frac{5}{8}$
13. Find three rational numbers between $\frac{1}{4}$ and $\frac{1}{2}$
14. Find ten rational numbers between $\frac{1}{4}$ and $\frac{1}{2}$
15. Represent these numbers on the number line. (i) $\frac{7}{4}$ (ii) $-\frac{5}{6}$ (iii) $\frac{4}{7}$ (iv) $\frac{9}{4}$
16. Represent $\frac{-2}{11}, \frac{-5}{11}, \frac{-9}{11}$ on the number line
17. Find five rational numbers between. (i) $\frac{2}{3}$ and $\frac{4}{5}$ (ii) $-\frac{3}{2}$ and $\frac{5}{3}$ (iii) $\frac{1}{4}$ and $\frac{1}{2}$
18. Write five rational numbers greater than -2
19. Find ten rational numbers between $\frac{3}{5}$ and $\frac{3}{4}$.
20. Write.
 - (i) The rational number that does not have a reciprocal.
 - (ii) The rational numbers that are equal to their reciprocals.



PRACTICE QUESTIONS
CLASS VIII: CHAPTER - 2
LINEAR EQUATION IN ONE VARIABLE

1. Find the solution of $\frac{3x+5}{2x+1} = \frac{1}{3}$

2. Find the solution of $\frac{x+6}{4} + \frac{x-3}{5} = \frac{5x-4}{8}$

3. Solve: $\frac{x}{4} + \frac{x}{6} = x - 7$

4. Solve: $\frac{2}{3}x + 1 = \frac{7}{3}$

5. Solve: $\frac{x}{3} + \frac{5}{2} = \frac{-3}{2}$

6. Solve: $\frac{15}{4} - 7x = 9$

7. Solve: $x = \frac{4}{5}(x+10)$

8. Solve: $\frac{2x}{3} + 1 = \frac{7x}{15} + 3$

9. Solve: $2y + \frac{5}{3} = \frac{26}{3} - y$

10. Solve: $3m - 5m - \frac{8}{5}$

11. Solve: $5x + \frac{7}{2} = \frac{3}{2}x - 14$



$$\text{Solve: } \frac{6x+1}{3} + 1 = \frac{x-5}{6}$$

$$\text{Solve: } 5x - 2(2x - 7) = 2(3x - 1) + \frac{7}{2}$$

$$\text{Solve: } \frac{3x-2}{4} - \frac{2x+3}{3} = \frac{2}{3} - x$$

$$\text{Solve: } \frac{3x+2}{7} + \frac{4(x+1)}{5} = \frac{2}{3}(2x+1)$$

$$\text{Solve: } x - \frac{x-1}{2} = 1 - \frac{x-2}{3}$$

$$\text{Solve: } \frac{x}{2} - \frac{3x}{4} + \frac{5x}{6} = 21$$

$$\text{Solve: } x + 7 - \frac{8x}{3} = \frac{17}{6} - \frac{5x}{2}$$

$$\text{Solve: } \frac{3x+4}{2-6x} = \frac{-2}{5}$$

$$\text{Solve: } \frac{7x+4}{x+2} = \frac{-4}{3}$$



CLASS VIII: CHAPTER - 1
RATIONAL NUMBERS

1. Find $\frac{3}{7} + \left(\frac{-6}{11}\right) + \left(\frac{-8}{21}\right) + \frac{5}{22}$
2. Find $\frac{-4}{5} \times \frac{3}{7} \times \frac{15}{16} \times \left(\frac{-14}{9}\right)$
3. Find using distributive property: (i) $\left\{\frac{7}{5} \times \left(\frac{-3}{12}\right)\right\} + \left\{\frac{7}{5} \times \frac{5}{12}\right\}$ (ii) $\left\{\frac{9}{16} \times \frac{4}{12}\right\} + \left\{\frac{9}{16} \times \frac{-3}{9}\right\}$
4. Find $\frac{2}{5} \times \frac{-3}{7} - \frac{1}{14} - \frac{3}{7} \times \frac{3}{5}$
5. Simplify: $\frac{-4}{5} \times \frac{3}{7} \times \frac{15}{16} \times \left(\frac{-14}{9}\right)$
6. Multiply $\frac{6}{13}$ by the reciprocal of $\frac{-7}{16}$.
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19. Find ten rational numbers between $\frac{3}{5}$ and $\frac{3}{4}$.
20. Write.
 - (i) The rational number that does not have a reciprocal.
 - (ii) The rational numbers that are equal to their reciprocals.



Subject: Science

Kendriya Vidyalaya, Indore
Summer Holiday Homework
Class -8th (Shift II)
SCIENCE

All the questions are compulsory. Draw neat and labelled diagrams where necessary.

- 1) Prepare a report on discovery by Louis Pasteur & MS Swaminathan.
- 2) Explain Nitrogen Cycle with the help of a diagram.
- 3) Define Crop rotation, its advantage, how it is differed from mixed cropping?
- 4) What is harvesting? Why it is marked with celebration?
- 5) Write a note on 1) Animal Husbandry 2) Storage of food.
- 6) Explain traditional methods of irrigation.
- 7) Explain the method of making compost.
- 8) Write an essay on the methods of food preservation.
- 9) Prepare a chart on "Useful and Harmful Microorganism" Paste/draw necessary pictures.
- 10) Prepare a herbarium file. Stick any 5 types of Crop Plants as you can collect. Write a short description each of them.

S.L.

R. Indore

Subject: Social Science

Class 8

Summer Holiday Homework KV No. 1 Indore shift 2

1. Locate all states with their capitals on the outline map of India and paste in homework notebook.
2. Paste the pictures of any 5 social reformers of India and write about them.
3. Draw the preamble of the Indian constitution in homework notebook .
4. Learn and write question answers in homework notebook chapter one geography and chapter one history.

Gift

Kavita
20/4/23

Rishu
V.P.

Class 8 B(Social science)

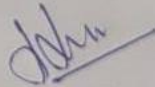
Summer Holiday Homework KV No. 1 Indore shift 2

1. Locate all states with their capitals on the outline map of India and paste in homework notebook.
2. Paste the pictures of any 5 social reformers of India and write about them.
3. Draw the preamble of the Indian constitution in homework notebook.
4. Learn and write question answers and exercise in homework notebook chapter one geography chapter one history.



V. Principal

Date- 29/04/2023



Subject Teacher

Subject : Computer

Class 8

- Q.1) What is an algorithm? Explain with an example.
Q.2) What do you mean by encryption? What is an encryption algorithm?
Q.3) Write an algorithm to find area of circle.
Q.4) Write an algorithm to open a Word file, edit and save.
Q.5) What is a flow chart?

Subject Teacher:- Minalini

Minalini

- Q.6) Prepare a word file on various types of box and symbols used in Flow chart.
Q.7) Draw a flow chart to find the sum of two numbers also write algorithm for the same.
Q.8) Draw a flow chart to find the area of circle.
Q.9) Write an algorithm to find the simple interest and draw a flow chart for the same.

Subject Teacher:-
Minalini

Subject: Sanskrit

Class 8

- 1 बालक , बालिका , पुष्प शब्द रूप लिखकर याद कीजिए ।
2 कोई भी 8 नीति परक श्लोक अर्थ सहित लिखकर याद कीजिए ।
3 पठ् धातु के पाँचों लकारों में रूप लिखकर याद कीजिए ।
4 10 पशु , 10 रंग , 10 घरेलू वस्तु , 10 रसोई घर की चीजों , 10 विद्यालय संबंधी शब्दों को हिन्दी और संस्कृत में लिखिए ।
5 एक संस्कृत गीत और एक संस्कृत कथा लिखकर याद कीजिए ।
6 1 - 100 तक संस्कृत में संख्या लिखकर याद कीजिए ।
7 5 पेज संस्कृत में सुलेख कीजिए ।

Minalini

Minalini

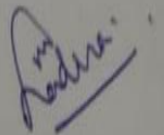
Class 9th Holiday Homework

Subject: English

SUMMER HOLIDAY HOMEWORK 2023-24

English : Class NINTH & TENTH

1. Solve 5 *UNSEEN PASSAGE* (CCT based)
2. Practice 5 sets of integrated grammar exercise.
3. Write questions based on Diary entry (class 9) and enquiry letters (class 10)
4. Revise tenses, active, passive voice
And preposition.
5. Revise lessons completed for the first Periodic test.



Subject: Hindi

केन्द्रीय विद्यालय

शीघ्रकालीन अवकाश गृह कार्य

विषय - हिन्दी, कक्षा - 9

निर्देश: सभी विद्यार्थी यह कार्य शीघ्रकालीन अवकाश में करेंगे।

1. किसान के जीवन पर 100 शब्दों में एक अनुच्छेद लिखिए।
2. अपने क्षेत्र में होने वाली फसलों की जानकारी एकत्रित करके लिखिए।
3. अपनी किसी एक यात्रा का संक्षिप्त वर्णन लिखिए
4. अनुच्छेद लिखिए-
1. राष्ट्र के प्रति विद्यार्थियों का कर्तव्य
2. भारतीय समाज में नारी का स्थान
3. बढ़ती जनसंख्या की समस्या
4. अष्टाचार एक समस्या 5. साक्षरता, उन्नति का मार्ग
5. किसी समाज सुधारक पर एक लेख लिखिए।
6. किसी एक स्वतंत्रता सेनानी का सचित्र वर्णन कीजिए।
7. अपने बड़े भाई की शादी में शामिल होने के लिए तीन दिन की छुट्टी हेतु प्राचार्य को एक पत्र लिखिए।
8. अपनी पाठ्यपुस्तक से उपसर्ग एवं प्रत्यय वाले 10-10 शब्द खोजकर लिखिए।



Subject: Mathematics

PRACTICE REVISION QUESTIONS NUMBER SYSTEM: CLASS IX (8 marks)

Representation of Irrational Numbers on number line

1. Represent $\sqrt{2}$, $\sqrt{3}$ and $\sqrt{5}$ on number line.
2. Represent $\sqrt{10}$ on number line
3. Represent $\sqrt{9.3}$ on number line

Converting p/q to decimal expansion and vice versa

4. Express the following in p/q form: (i) $1.\overline{245}$ (ii) $2.\overline{35}$ (iii) $3.\overline{245}$
5. Find two rational and irrational numbers between $\sqrt{2}$ and $\sqrt{3}$.
6. Find two rational and irrational numbers between $\frac{2}{5}$ and $\frac{3}{5}$

Visualization of decimal expansion on number line

7. Visualise 3.765 on the number line, using successive magnification.
8. Visualise $4.\overline{26}$ on the number line, up to 4 decimal places.

Rationalisation based questions

9. Simplify the following by rationalizing the denominator.

$$(i) \frac{4+\sqrt{5}}{4-\sqrt{5}} + \frac{4-\sqrt{5}}{4+\sqrt{5}} \quad (ii) \frac{\sqrt{5}-1}{\sqrt{5}+1} + \frac{\sqrt{5}+1}{\sqrt{5}-1} \quad (iii) \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}} + \frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$$

10. Find the value of a and b in each of the following:

$$(i) \frac{3+\sqrt{2}}{3-\sqrt{2}} = a+b\sqrt{2} \quad (ii) \frac{3+\sqrt{7}}{3-\sqrt{7}} = a+b\sqrt{7} \quad (iii) \frac{7+\sqrt{5}}{7-\sqrt{5}} = a+b\sqrt{5}$$

$$(iv) \frac{4+3\sqrt{5}}{4-3\sqrt{5}} = a+b\sqrt{5} \quad (v) \frac{2+\sqrt{3}}{2-\sqrt{3}} = a+b\sqrt{3} \quad (vi) \frac{\sqrt{11}-\sqrt{7}}{\sqrt{11}+\sqrt{7}} = a-b\sqrt{77}$$

$$(vii) \frac{5+2\sqrt{3}}{7+4\sqrt{3}} = a+b\sqrt{3} \quad (viii) \frac{5-\sqrt{6}}{5+\sqrt{6}} = a-b\sqrt{6} \quad (ix) \frac{\sqrt{3}-1}{\sqrt{3}+1} = a+b\sqrt{3}$$

$$11. \text{ Prove that } \frac{1}{3-\sqrt{8}} - \frac{1}{\sqrt{8}-\sqrt{7}} + \frac{1}{\sqrt{7}-\sqrt{6}} - \frac{1}{\sqrt{6}-\sqrt{5}} + \frac{1}{\sqrt{5}-2} = 5$$

$$12. \text{ If } x = \frac{\sqrt{2}+1}{\sqrt{2}-1} \text{ and } y = \frac{\sqrt{2}-1}{\sqrt{2}+1}, \text{ find the value of } x^2 + y^2 + xy.$$

$$13. \text{ If } x = \frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}} \text{ and } y = \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}, \text{ find the value of } x^2 + y^2.$$

$$14. \text{ If } x = \frac{\sqrt{5}+\sqrt{3}}{\sqrt{5}-\sqrt{3}} \text{ and } y = \frac{\sqrt{5}-\sqrt{3}}{\sqrt{5}+\sqrt{3}}, \text{ find the value of } x+y+xy.$$

$$15. \text{ If } x = \frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}, \text{ find (i) } x^2 + \frac{1}{x^2} \text{ (ii) } x^4 + \frac{1}{x^4}.$$

$$16. \text{ If } x = 4-\sqrt{15}, \text{ find (i) } x^2 + \frac{1}{x^2} \text{ (ii) } x^4 + \frac{1}{x^4}.$$

$$17. \text{ If } x = 2+\sqrt{3}, \text{ find (i) } x^2 + \frac{1}{x^2} \text{ (ii) } x^4 + \frac{1}{x^4}.$$

Laws of Exponents based questions

$$18. \text{ Evaluate: (i) } \left(\frac{256}{6561}\right)^{\frac{3}{8}} \text{ (ii) } (15625)^{\frac{1}{5}} \text{ (iii) } \left(\frac{343}{1331}\right)^{\frac{1}{3}} \text{ (iv) } \sqrt[8]{\frac{6561}{65536}}$$

$$19. \text{ Evaluate: (i) } \left(\frac{625}{81}\right)^{\frac{1}{4}} \text{ (ii) } (6.25)^{\frac{3}{2}} \text{ (iii) } (0.000064)^{\frac{5}{6}} \text{ (iv) } (17^2 - 8^2)^{\frac{1}{2}}$$

$$20. \text{ Find the value of } \frac{4}{(216)^{\frac{-2}{3}}} + \frac{1}{(256)^{\frac{-3}{4}}} + \frac{2}{(243)^{\frac{-1}{5}}}$$

$$21. \text{ If } 2^x = 3^y = 6^{-z}, \text{ then prove that } \frac{1}{x} + \frac{1}{y} + \frac{1}{z} = 0.$$

$$22. \text{ Show that } \frac{1}{1+x^{a-b}} + \frac{1}{1+x^{b-a}} = 1$$

$$23. \text{ Show that } \left(\frac{x^a}{x^b}\right)^{a+b} \cdot \left(\frac{x^b}{x^c}\right)^{b+c} \cdot \left(\frac{x^c}{x^a}\right)^{c+a} = 1$$

$$24. \text{ If } 27^x = \frac{9}{3^x}, \text{ find the value of } x.$$

$$25. \text{ If } 25^{x-1} = 5^{2x-1} - 100, \text{ then find the value of } x.$$

Subject : Science

Kendriya Vidyalaya, Indore
Summer Holiday Homework
Class -9th (Shift II)
SCIENCE

All the questions are compulsory. Draw neat and labelled diagrams where necessary.

- 1) Write the contribution of following scientist in the study of cell-
A) Robert Hooke B) Purkinje C) Leeuwenhoek D) Robert Brown E) Schleiden and Schwann
- 2) Prepare 10-10 MCQS from Chapter 1- Matter in surrounding and Chapter-2 Is the matter is pure. (*Note- other than book)
- 3) Prepare a model/chart on Plant cell/Animal cell.
- 4) Compare the properties of solid, liquid and gas.
- 5) Explain in detail- a) Evaporation b) Tyndall effect c) Sublimation d) Bose-Einstein Condensate.
- 6) Give Reasons-
 - a) Why gases exert pressure on the walls of container?
 - b) A wet khus screen hung at the door keep the room cool.
 - c) Why we are able to sip hot tea/ milk faster from a saucer than a cup?
 - d) Why a saturated solution become unsaturated?
 - e) Latent heat does not cause any change in kinetic energy of particles. Why?

Rohini

Nand

Subject: Social Science

Class 9

Summer Holiday Homework KV No. 1 Indore shift 2

- 1. Locate all the states with their capitals on the outline map of India and phase 10 homework notebook.**
- 2. Right fundamental rights and duties.**
- 3. Learn and write all the question answers and exercises in the notebook. Chapter 1- history chapter 1- geography**
- 4. Differentiate between modern and traditional farming method.**
- 5. Discuss the size and location of India and locate on globe also.**
- 6. You can paste or draw 5 important monuments of India. write some important features about them?**

G.P.

Kavita
26/4/23

Sharma
V.P.

Subject: Sanskrit

Class - 9

1. मणिका पाठ्य पुस्तक के पाठ 1-5 का वाचन, पठन और गहन कीर्ति।
- 1 बालक, बालिका, पुष्प शब्द रूप लिखकर याद कीजिए।
- 2 कोई भी 8 नीति परक श्लोक अर्थ सहित लिखकर याद कीजिए।
- 3 पठ् धातु के पांचों लकारों में रूप लिखकर याद कीजिए।
- 4 10 पशु, 10 रंग, 10 घरेलू वस्तु, 10 रसोई घर की चीजों, 10 विद्यालय संबंधी शब्दों को हिन्दी और संस्कृत में लिखिए।
- 5 एक संस्कृत गीत और एक संस्कृत कथा लिखकर याद कीजिए।
- 6 1-100 तक संस्कृत में संख्या लिखकर याद कीजिए।

Praveen

21/10/21

Subject: Computer Application

Class 9 (Computer Applications)

- Q.1) What is Web? Explain briefly.
- Q.2) What is Html? Explain briefly. Prepare a mind map on HTML tags and their uses.
- Q.3) Make a result table using HTML. (Use data from your 8th std annual report card)
- Q.4) What is CSS? Explain briefly.
- Q.5) Prepare a mind map chart of CSS properties.
- Q.6) What is CSS class?

Praveen Subject :- *Minishi*
Teacher

Subject: Artificial Intelligence

Class 9 (Artificial Intelligence)

Q.1) Multiple Choice Questions:

1. Which one is correct?
 - a. Deep Learning < A.I. < Machine Learning
 - b. Machine Learning < Deep Learning < A.I
 - c. Deep Learning < Machine Learning < A.I.
 - d. A.I. > Deep Learning > Machine Learning
2. What is Artificial Intelligence?
 - a. Code people created
 - b. Robots that are smarter than us
 - c. Robots that act like human being
 - d. Fake intelligence
3. When someone programs a robot by moving it physically through the trajectory that they want it to follow is known as:
 - a. Robot vision control
 - b. Contact sensing control
 - c. Pick-and-place control
 - d. Continuous-path control
4. ____ is the person or entity originating the communication?
 - a. Source
 - b. Sender

My
Answer

Minister

- c. Receiver
 - d. Channel
5. What is the purpose of communication?
 - a. Inform (tell someone about something)
 - b. Influence (get someone to do something you want)
 - c. Share thoughts, ideas, feelings
 - d. All of the above
 6. Which of the following methods are used to receive information from the sender through a letter?
 - a. Listening
 - b. Speaking
 - c. Reading
 - d. Writing
 7. How do you receive information on phone?
 - a. Listening
 - b. Speaking
 - c. Reading
 - d. Writing
 8. Choose the correct example of oral communication
 - a. Reports
 - b. Newspapers
 - c. Face-to-face conversation
 - d. Notes
 9. When we communicate verbally, we should use
 - a. difficult words
 - b. simple words
 - c. confusing words
 - d. abbreviations
 10. Why do we send emails?
 - a. To reach on time
 - b. To share documents and files
 - c. To talk to each other
 - d. to meet

Q.2) Very Short Answers:

1. Who coined the term Artificial Intelligence and when?
2. what is the AI field?
3. What contributes to AI?
4. Why AI is important?
5. Why AI today?

Subject: AI
Teacher: M. S. M. M.

Q.3) Write and explain goals of AI.

Q.4) Prepare a chart on Applications of AI.

Q.5) Prepare a chart on domains of AI.

Q.6) Design your Dream Home. (try to implement possible implementation of AI in your dream home.)

Make notes and maintain Copy

Subj. : AI
Teacher : M. S. M. M.

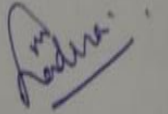
Holiday Homework Class 10th

Subject : English

SUMMER HOLIDAY HOMEWORK 2023-24

English : Class NINTH & TENTH

1. Solve 5 *UNSEEN PASSAGE* (CCT based)
2. Practice 5 sets of integrated grammar exercise.
3. Write questions based on Diary entry (class 9) and enquiry letters (class 10)
4. Revise tenses, active, passive voice
And preposition.
5. Revise lessons completed for the first Periodic test.



Subject: Hindi

केन्द्रीय विद्यालय

शीष्मकालीन अवकाश गृह कार्य

विषय - हिन्दी, कक्षा - 10

निर्देश:- सभी विद्यार्थी यह कार्य शीष्मकालीन अवकाश में करेंगे।

1. किसी एक स्वतंत्रता सेनानी का सचित्र वर्णन कीजिए

2. अनुच्छेद लेखन

1 प्रातः कालीन भ्रमण

2 मेरे जीवन का लक्ष्य

3 पुस्तकें पढ़ने की आदतें

4 मेरे सपनों का भारत

5 आज की बचत कल का सुख

3. आपका नाम सौरभ कुमार है आप दसवीं कक्षा के छात्र हैं आपकी अंग्रेजी विषय की पढ़ाई समय पूरी ना होने के कारण विषय की अतिरिक्त कक्षाएं लगवाने हेतु प्रधानाचार्य लिखें।

4. आपके क्षेत्र में डेंगू फैल रहा है स्वास्थ्य अधिकारी को पत्र लिखकर उपयोग चिकित्सा व्यवस्था उपलब्ध कराने हेतु प्रार्थना लिखिए।

5. आप से किसी महापुरुष की मूर्ति लगाने के लिए कहा जाए तो आप

किसकी मूर्ति लगाएंगे, और क्यों ?

6. एक आदर्श प्रश्न पत्र को हल कीजिए

विषय-हिंदी, कोर्स-ए (कोड-002)

सामान्य निर्देश :

Subject: Mathematics

PRACTICE QUESTIONS (REAL NUMBERS)
CLASS: X : MATHEMATICS

1. Find the least number that is divisible by all the numbers 1 to 10 (both inclusive).
2. If the LCM of a and 18 is 36 and the HCF of a and 18 is 2 then find the value of a.
3. If two positive integers p and q can be expressed as $p = ab^2$ and $q = a^3b$; a, b being prime numbers, then find LCM (p, q).
4. If p and q are positive integers such that $p = ab^2$ and $q = a^2b$, where 'a' and 'b' are prime numbers, then find the LCM (p, q).
5. If HCF of 510 and 92 is 2, then find the LCM.
6. Find the value of 'a', if $\text{HCF}(a, 18) = 2$ and $\text{LCM}(a, 18) = 36$.
7. The HCF of two numbers is 9 and their LCM is 2016. If the one number is 54, then find the other number.
8. Two numbers are in the ratio of 15:11. If their H.C.F. is 13, then find the numbers
9. Find the prime factorisation of 2120.
10. Find the prime factorisation of 108.
11. If p and q are two distinct prime numbers, then find their HCF.
12. Find the HCF of the smallest composite number and smallest prime number.
13. Find the LCM of smallest two-digit composite number and smallest composite number.
14. Find the ratio of LCM and HCF of the least composite and the least prime numbers.
15. The LCM of two numbers is 14 times their HCF. The sum of LCM and HCF is 600. If one number is 280, then find the other number
16. If $\text{HCF}(26, 169) = 13$, then find $\text{LCM}(26, 169)$.
17. If $\text{HCF}(90, 144) = 18$, then find $\text{LCM}(90, 144)$.
18. Show that the number 6^n never end with digit 0 for any natural number n.
19. Show that $(7 \times 13 \times 11) + 11$ and $(7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1) + 3$ are composite numbers.
20. Find HCF and LCM of 625, 1125 and 2125 using prime factorisation.
21. Find the HCF and LCM of 96 and 404 using prime factorisation.
22. Find the HCF and LCM of 6, 72 and 120 using prime factorisation.
23. Given that $\sqrt{3}$ is irrational, prove that $5 + 2\sqrt{3}$ is irrational.
24. Given that $\sqrt{5}$ is irrational, prove that $3 - 2\sqrt{5}$ is irrational.
25. Given that $\sqrt{3}$ is irrational, prove that $2 - 5\sqrt{3}$ is irrational.
26. Given that $\sqrt{5}$ is irrational, prove that $2 + 3\sqrt{5}$ is irrational.
27. Prove that $\sqrt{3}$ is an irrational number.
28. Prove that $\sqrt{5}$ is an irrational number.
29. Prove that $\sqrt{2} + \sqrt{3}$ is an irrational number
30. Prove that $\sqrt{3} + \sqrt{5}$ is an irrational number





PRACTICE QUESTIONS (POLYNOMIALS)
CLASS: X : MATHEMATICS

1. If α, β are the zeroes of the polynomial $P(x) = 4x^2 + 3x + 7$, then find the value of $\frac{1}{\alpha} + \frac{1}{\beta}$.
2. If one zero of the quadratic polynomial $x^2 + 3x + k$ is 2, then find the value of k .
3. If p and q are the zeroes of the quadratic polynomial $f(x) = 2x^2 - 7x + 3$, find the value of $p + q - pq$.
4. If one zero of the quadratic polynomials: $kx^2 + 3x + k$ is 2, then find the value of k .
5. If one of the zeroes of the quadratic polynomial $(k - 1)x^2 + kx + 1$ is -3 , then find the value of k .
6. If zeroes of $p(x) = 2x^2 - 7x + k$ are reciprocal of each other, then find the value of k .
7. If the zeroes of the quadratic polynomial $x^2 + (a + 1)x + b$ are 2 and -3 then find a and b .
8. Find the quadratic polynomial, the sum of whose zeroes is -5 & product is 6.
9. Find the value of m if polynomial $p(x) = 4x^2 - 6x - m$ is exactly divisible by $x - 3$.
10. Find a quadratic polynomial whose zeroes are -9 and $-1/9$.
11. If one zero of the quadratic polynomial $2x^2 + px + 4$ is 2, find the other zero. Also, find the value of p .
12. Find a quadratic polynomial whose one zero is 5 and product of zeroes is 30.
13. Find a quadratic polynomial whose zeroes are 3 and -5 .
14. Find a quadratic polynomial whose zeroes are $5 + \sqrt{2}$ and $5 - \sqrt{2}$.
15. If the product of the zeroes of the polynomial $ax^2 - 6x - 6$ is 4, then find the value of a . Also find the sum of zeroes of the polynomial.
16. Find the zeroes of the quadratic polynomial $x^2 - 2x - 8$ and verify the relationship between the zeroes and the coefficients of the polynomial.
17. Find the zeroes of the quadratic polynomial $6x^2 - 3 - 7x$ and verify the relationship between the zeroes and the coefficients of the polynomial.
18. Find the zeroes of the quadratic polynomial $2x^2 - x - 6$ and verify the relationship between the zeroes and the coefficients of the polynomial.
19. Find the zeros of the polynomial $x^2 + \frac{1}{6}x - 2$, and verify the relation between the coefficients and zeros of the polynomial.
20. If the sum of the zeroes of the polynomial $p(x) = (k^2 - 14)x^2 - 2x - 12$ is 1, then find the value of k .



Subject : Science (Physics)

CLASS X PHYSICS HOLIDAY HOMEWORK (2023-24)

Solve all question in homework notebook

1. What is the magnification of the images formed by plane mirrors and why?
2. four properties of the image formed by a concave mirror when object is placed between focus and pole of the mirror.
3. List four specific characteristics of the images of the objects formed by convex mirrors.
4. The absolute refractive indices of glass and water are 32 and 43 respectively. If the speed of light is 2×10^8 m/s, calculate the speed of light in (i) vacuum, (ii) water.

An object is placed at a distance of 30 cm in front of a convex mirror of focal length 15 cm. Write four characteristics of the image formed by the mirror.
5. A student places a candle flame at a distance of about 60 cm from a convex lens of focal length 10 cm and focuses the image of the flame on a screen. After that he gradually moves the flame towards the lens and each time focuses the image on the screen. (a) In which direction-toward or away from the lens, does he move the screen to focus the image? (b) How does the size of the image change? (c) How does the intensity of the image change as the flame moves towards the lens? (d) Approximately for what distance between the flame and the lens, the image formed on the screen is inverted and of the same size?
6. Draw the ray diagram and also state the position, the relative size and the nature of image formed by a concave mirror when the object is placed at the centre of curvature of the mirror.
7. Define, 'refractive index of a transparent medium'. What is its unit? Which has a higher refractive index – glass or water?
8. State the type of mirror preferred as (i) rear view mirror in vehicles, (ii) shaving mirror. Justify your answer giving two reasons in each case.
9. Identify the device used as a spherical mirror or lens in following cases, when the image formed is virtual and erect in each case. (a) Object is placed between device and its focus, image formed is enlarged and behind it. (b) Object is placed between the focus and device, image formed is enlarged and on the same side as that of the object. (c) Object is placed between infinity and device, image formed is diminished and between focus and optical centre on the same side as that of the object. (d) Object is placed between infinity and device, image formed is diminished and between pole and focus, behind it.
10. A pencil when dipped in water in a glass tumbler appears to be bent at the interface of air and water. Will the pencil appear to be bent to the same extent, if instead of water we use liquids like, kerosene or turpentine? Support your answer with reason

Sub Tr: *Dy*

Dy
26-11-23

Subject: Science (Chemistry)

Class X

SUMMER HOLIDAY HW 2023-24

SUBJECT- CHEMISTRY

Q.1 Collect different Chemicals and write their chemical names.

Q.2 Identify the different Chemical reactions in your surroundings and classify them as combination decomposition, displacement and double displacement reactions. Also write Exothermic or Endothermic reactions.



Q.3 Prepare chapter chemical reaction and equation for unit test after vacations.

Q.4 Solve the questions of first chapter from exercise and write it in your home work copy.

Subject teacher

P Lanjewar

PGT Chemistry.



v.p.

Subject: Science (Biology)

Summer Holiday Homework
Class - 10th
Subject Science (Bio)

Solve all the questions in your HW notebook

- Q.1. Draw well labelled diagrams of Human alimentary canal system.
- Q.2. Make a flow chart of Human Nutrition.
- Q.3. Draw a well labelled diagram of Human Respiratory system.
- Q.4. Draw a well labelled diagram of Human Circulatory system.
- Q. 5. Describe pumping of blood in heart by flow chart.
- Q.6. Make flow chart of Human Respiration.
- Q.7. Differentiate between Human Nutrition and plant nutrition.
- Q.8. Differentiate between Aerobic and Anaerobic Respiration.
- Q.9. Describe Excretion process in humans.
- Q.10. Draw a well labelled diagram of Human Brain and give some functions of Human Brain.

Kavya

Prerna

Subject: Social Science

Class 10

Summer Holiday Homework KV No. 1 Indore shift 2

- 1. Locate all the states with their capitals on the outline map of India and Paste in homework notebook.**
 - 2. Make a project file on consumer awareness.**
 - 3. Learn and write all the question answers and exercises in the notebook. Chapter 1- history chapter 1- geography chapter 1 and 2 politics – chapter 1**
 - 4. Differentiate between modern and traditional farming method.**
 - 5. Locate all the places On the outline map of India as per CBSE list given in cbse curriculum.**
- Make 20 mcq of each Completed chapter.**

Q.S.

Kavita.
26/4/23

V.P.

Subject: Computer Applications

Class 10 (Computer Applications)

- Q.1) What is Web? Explain briefly.
- Q.2) What is Webpage?
- Q.3) What is Html? Explain briefly. Prepare a mind map on HTML tags and their uses.
- Q.4) What is CSS? Explain briefly. Also prepare mind map chart for the CSS properties and it uses.
- Q.5) What do you mean by media? Explain the types of media briefly.
- Q.6) What is Multimedia?
- Q.7) Prepare a chart of compatible multimedia file formats for Webpage.
- Q.7) What do you mean by embedding?
- Q.8) Create a Music description web page and embed audio file.
- Q.9) Write algorithm to embed multimedia in a an html document.
- Q.10) Create a web page on "Save Water" which has some information with one link to video on save water awareness. When user clicks it should play the video.
- Q.11) What are Plug-ins? Write steps to import plug-in in webpage.

Subject
Teacher :

Mansuri

Adnan

Subject: Artificial Intelligence

Class 10 (Artificial Intelligence)

- Q.1) Prepare a chart on various methods of communication.
- Q.2) What is Artificial Intelligence? Explain why do we need AI?
- Q.3) Make a detailed report on applications of AI in various sectors (like Health care, Automation, Education etc)
- Q.4) Make a detailed report on Human Intelligence. Create mind maps for human intelligence traits.
- Q.5) What is meant by intelligence? What are the types of intelligence? Prepare mind maps and charts on the same.
- Q.6) Prepare detailed presentation on the topic " how does Machines differ from humans what makes us more complex? How can a machine become intelligent? ".
- Q.7) Make a presentation on how intelligence and information helps us in making decisions.

Mansuri

Adnan

Subject: Sanskrit

Class 10

10th.


- 1) संस्कृत में पढ़ाये गए "शुचिपर्यावरणम्" के सभी श्लोकों का अर्थ, अन्वय सहित लिखो और उसके सारांश को याद करो।
- 2) संस्कृत में पढ़ाए गए "बुद्धिर्बलवती सदा" पाठ का सारांश लिखकर उसे याद करना।
- 3) निम्नलिखित शब्दों के रूप लिखो और याद करो -

राम, लता, फल, हरि, गुरु, धेनु, नदी, मति, राजन्, मातृ- पितृ, अस्मद्, युष्मद्,

तत् (तीनोंलिङ्ग), किम् (तीनोंलिङ्ग), इदम् (तीनोंलिङ्ग)

- 4) निम्नलिखित धातुओं के रूप पांचों लकारों में लिखो और याद करो-
गम् (जाना), लिख् (लिखना), क्रीड् (खेलना), स्था (बैठना), वस् (रहना), कृ (करना), दृश् (देखना), इष् (इच्छाकरना), खाद् (खानेकेअर्थमें), सेव् (सेवाकरना आत्मनेपद)

रि. 21



Holiday Homework Class 12th

Science Stream:

Subject: Physics

Class 12A Physics Holiday Homework(2023-24)

Section A(2 MARK QUESTIONS)

- 1) A force F is acting between two charges placed some distance apart in vacuum. If a brass rod is placed between these two charges how does the force change?
- 2) Two dipoles made charges $+q$ and $+Q$ respectively have equal dipole moments. Give the (i) ratio between the separation of these two pairs of charges (ii) angle between the dipole axes of these two dipoles.
- 3) A metallic spherical shell has an inner radius R_1 and outer radius R_2 . A charge Q is placed at the centre of the spherical cavity. What will be the surface charge density on (i) the inner surface and (ii) the outer surface?
- 4) When a glass rod is rubbed with a silk cloth, charges appear on both. A similar phenomenon is observed with many other pairs of bodies. Explain how this observation is consistent with the law of conservation of charge. Explain the meaning of the statement 'electric charge of a body is 'quantized'.
- 5) Four-point charges $q_A = 2 \mu\text{C}$, $q_B = -5 \mu\text{C}$, $q_C = 2 \mu\text{C}$, and $q_D = -5 \mu\text{C}$ are located at the corners of a square ABCD of side 10 cm. What is the force on a charge of $1 \mu\text{C}$ placed at the center of the square?
- 6) A system has two charges $q_A = 2.5 \times 10^{-7} \text{ C}$ and $q_B = -2.5 \times 10^{-7} \text{ C}$ located at points A: (0, 0, -15 cm) and B: (0, 0, +15 cm), respectively. What are the total charge and electric dipole moment of the system?
- 7) (a) An electrostatic field line is a continuous curve. That is, a field line cannot have sudden breaks. Why not? (b) Explain why two field lines never cross each other at any point?

Section B(3 marks questions)

- 1) Define the term dipole moment P of an electric dipole indicating its direction. Write its S.I unit. An electric dipole is placed in a uniform electric field E . Deduce the expression for the Torque acting on it.
- 2) Two point charges $+q$ and $+9q$ are separated by a distance of $10a$. Find the point on the line joining the two charges where electric field is zero?
- 3) Consider a uniform electric field $E = 3 \times 10^3 \text{ N/C}$. (a) What is the flux of this field through a square of 10 cm on a side whose plane is parallel to the yz plane? (b) What is the flux through the same square if the normal to its plane makes a angle 60 degree with the x -axis?
- 4) A thin conducting spherical shell of radius R has charge Q spread uniformly over its surface. Using Gauss's law, derive an expression for an electric field at a point outside the shell. Draw a graph of electric field $E(r)$ with distance r from the centre of the shell for $0 \leq r \leq \infty$
- 5) A conducting sphere of radius 10 cm has an unknown charge. If the electric field 20 cm from the centre of the sphere is $1.5 \times 10^3 \text{ N/C}$ and points radially inward, what is the net charge on the sphere?

Section C (LONG ANSWER)

QUESTIONS 1. (a) State Gauss theorem in electrostatics. Using it, prove that the electric field at a point due to a uniformly charged infinite plane sheet is independent of the distance. (b) How is the field directed if (i) the sheet is positively charged, (ii) negatively charged?

2. Use Gauss's law to derive the expression for the electric field (E^*) due to a straight uniformly charged infinite line of charge $\lambda \text{ Cm}^{-1}$.

3. Define electric flux and write its SI unit. The electric field components in the figure shown are : $E_x = \alpha x$, $E_y = 0$, $E_z = 0$ where $\alpha = 100 \text{ N/cm}$. Calculate the charge within the cube, assuming $a = 0.1 \text{ m}$.

MCQ

1. Three-point charges Q_1 , Q_2 and Q_3 are placed equally spaced in order along a straight line. Q_2 and Q_3 are equal in magnitude but opposite in sign. If the net force on Q_3 is zero, the value of Q_1 is (a) $Q_1 = 4Q_3$ (b) $Q_1 = 2(Q_3)$ (c) $Q_1 = \sqrt{2} Q_3$ (d) $Q_1 = |Q_3|$

2. Two-point charges are placed at a distance d apart. If a copper plate is placed between the charges the effective force will be (a) F (b) $2F$ (c) \sqrt{F} (d) zero

3. The charges on two spheres are $+7 \mu\text{C}$ and $-5 \mu\text{C}$ respectively. They experience a force F . If an additional charge of $-2 \mu\text{C}$ is given to each of them the force between them is (a) F (b) $F/2$ (c) $F/\sqrt{3}$ (d) $2F$

4. What is the flux through a cube if q is at one corner of the cube? (a) q/ϵ_0 (b) $2q/\epsilon_0$ (c) $q/8 \epsilon_0$ (d) $q/4 \epsilon_0$

5. Two positive ions each carrying a charge q are separated by a distance d . If F is the force of repulsion between the ions, the number of electrons missing from each ion will be (a) $4\pi\epsilon_0 F d^2 e^{-2}$ (b) $\sqrt{4\pi\epsilon_0 F d^2 e^{-2}}$ (c) $\sqrt{4\pi\epsilon_0 F d^2 e^{-2}}$ (d) $4\pi\epsilon_0 F e^{-2} d^2$


6. A plane square sheet of charge of side 0.5 m has uniform surface charge density. An electron at 1 cm from the center of the sheet experiences a force of $1.6 \times 10^{-19} \text{ N}$ directed away from the sheet. The total charge on the plane square sheet is (a) $16.25 \mu\text{C}$ (b) $-22.15 \mu\text{C}$ (c) $-44.27 \mu\text{C}$ (d) $144.27 \mu\text{C}$

7. Seven charges of equal magnitude q are placed at the corners of a cube of side b . The force experienced by another charge Q placed at the center of the cube is (a) Zero (b) $KQq/3b$ (c) $7KQq/3b$ (d) $2KQq/3b$

8. Electric charge is uniformly distributed along a long straight wire of radius 1 mm . The charge per cm of the wire is Q coulomb. Another cylindrical surface of length L meter encloses the wire symmetrically, The total flux through the surface is (a) Q/ϵ_0 (b) LQ/ϵ_0 (c) $QL/10^{-3}\epsilon_0$ (d) $Q/L 10^{-3}\epsilon_0$

9. The total electric flux emanating from an alpha particle is (a) $2e/\epsilon_0$ (b) e/ϵ_0 (c) $4e/\epsilon_0$ (d) $e/2\epsilon_0$

10. A positive charge Q is placed at the center of a neutral conducting metal sphere and an electric field E is applied outside the sphere. Then (a) force on Q is due to E is zero (b) Net force on Q is zero (c) Net force on Q and conducting shell as a single system is zero (d) Net force on the shell due to E is zero

Sub Tr: 


26/04/23

Subject: Chemistry

Class 12

Summer Holiday HW 2023

SUB: CHEMISTRY

Q1. Revise about various Electron displacement effects from Class 11th textbooks and write their definitions with examples.

(Inductive effect, Resonance effect, Electromeric effect and Hyperconjugation)

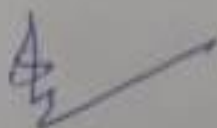
Q2. Learn the periodic properties and their trends. Define the following terms

Electron gain Enthalpy, Ionization enthalpy, Hydration enthalpy, bond dissociation enthalpy, Electronegativity

Q3. Prepare first 2 chapters thoroughly for unit test


Q4. Complete your Investigatory project on the topic taken/ selected by you.

Q5. Construct a Galvanic cell and try to find the chemistry behind it.



Subject Teacher: Mr P Lanjewar

PGT Chemistry



Subject: Mathematics

Class XII SUMMER HOLIDAY HW 2023-24

SUBJECT- MATHEMATICS(MCQ)

SL.NO. QUESTIONS (relation and function)

1 Let S be the set of all square in a plane with R a relation in S given by $R = \{(S_1, S_2) : S_1 \text{ is congruent to } S_2\}$. Then R is

- (a) an equivalence relation. (b) only reflexive
(c) transitive not symmetric (d) only symmetric

2 Given set $A = \{1, 2, 3\}$ and a relation $R = \{(1, 3), (3, 1)\}$, the relation R will be

- (a) reflexive if $(1, 1)$ is added (b) symmetric if $(2, 3)$ is added
(c) transitive if $(1, 1)$ is added (d) symmetric if $(3, 2)$ is added

3 The function $f : [0, \infty) \rightarrow R$ given by $f(x) = x/x+1$

- (a) f is both one-one and onto (b) f is one-one but not onto
(c) f is onto but not one-one (d) neither one-one nor onto

4 Which of the following functions from Z to itself are bijections?

- (a) $f(x) = x^3$ (b) $f(x) = x + 2$ (c) $f(x) = 2x+1$ (d) $f(x) = x^2 + x$

5 Let $A = \{1, 2, 3\}$, $B = \{1, 4, 6, 9\}$ and R is a relation from A to B define by 'x is greater than y'. Then range of R is given by:

- (a) $\{1, 4, 6, 9\}$ (b) $\{4, 6, 9\}$ (c) $\{1\}$ (d) none of these

6 Let N be the set of all natural numbers and let R be a relation in N, defined by $R = \{(a, b) : a \text{ is a factor of } b\}$.

- (a) R is symmetric and transitive but not reflexive
(b) R is reflexive and symmetric but not transitive
(c) R is equivalence
(d) R is reflexive and transitive but not symmetric

7 Let N be the set of all natural numbers and let R be a relation on $N \times N$, defined by $(a, b) R (c, d) \iff ad = bc$.

- (a) R is symmetric and transitive but not reflexive
(b) R is reflexive and symmetric but not transitive
(c) R is equivalence
(d) R is reflexive and transitive but not symmetric

8 Let A be the set of all points in a plane and let O be the origin. Let $R = \{(P, Q) : OP = OQ\}$. Then, R is

- (a) reflexive and symmetric but not transitive
(b) reflexive and transitive but not symmetric
(c) symmetric and transitive but not reflexive
(d) an equivalence relation

9 If $f = \{(1, 2), (3, 5), (4, 1)\}$ and $g = \{(2, 3), (5, 1), (1, 3)\}$ then $(g \circ f) = ?$

- (a) $\{(3, 1), (1, 3), (3, 4)\}$
(b) $\{(1, 3), (3, 1), (4, 3)\}$
(c) $\{(3, 4), (4, 3), (1, 3)\}$
(d) $\{(2, 5), (5, 2), (1, 5)\}$

10 Let $X = \{-1, 0, 1\}$, $Y = \{0, 2\}$ and a function $f : X \rightarrow Y$ defined by $y = 2x^4$, is

- (a) one-one onto (b) one-one into
(c) many-one onto (d) many-one into

11 Set A has 2 elements and the set B has 3 elements. Then the number of relations that can be defined from set A to set B is

- (a) 144 (b) 12 (c) 24 (d) 64

12 Let A be the set of all 50 students of Class X in a school. Let $f : A \rightarrow N$ be function defined by $f(x) = \text{roll number of the student } x$.

- (a) f is neither one-one nor onto. (b) f is one-one but not onto
(c) f is not one-one but onto (d) none of these

13 Let R be the relation in the set N given by $R = \{(a, b) : a = b - 3, b > 6\}$. Choose the correct answer.

- (A) $(2, 4) \in R$ (B) $(3, 8) \in R$ (C) $(6, 8) \in R$ (D) $(4, 7) \in R$

14 The function $f : R \rightarrow R$, defined as $f(x) = x^2$, is

- (a) neither one-one nor onto (b) only onto
(c) one-one (d) none of these

15 Let R be a relation defined on Z as follows:

$$(x, y) \in R \iff |x - y| \leq 1. \text{ Then R is:}$$

- (a) Reflexive and transitive (b) Reflexive and symmetric
(c) Symmetric and transitive (d) an equivalence relation

16. Let $A = \{1, 2, 3\}$ and consider the relation $R = \{(1, 1), (2, 2), (3, 3), (1, 2), (2, 3), (1, 3)\}$. Then R is

- (A) Reflexive but not symmetric (B) Reflexive but not transitive
(C) Symmetric and transitive (d) Neither symmetric nor transitive

17. Let S be the set of all real numbers. Then the relation $R = \{(a, b) : 1 + ab > 0\}$ on S is

- (A) Reflexive and symmetric but not transitive.
(B) Reflexive and transitive but not symmetric.
(C) Symmetric and transitive but not reflexive.
(d) Reflexive, symmetric and transitive.

18 Let R be a relation defined on Z as follows: $(a, b) \in R \iff a^2 + b^2 = 25$. Then the domain of R is

- (A) $\{3, 4, 5\}$ (B) $\{0, 3, 4, 5\}$ (C) $\{0, \pm 3, \pm 4, \pm 5\}$ (d) None of these

19 If $A = \{a, b, c\}$, then the relation $R = \{(b, c)\}$ on A is

- (A) Reflexive only (B) Symmetric only
(C) Transitive only (d) Reflexive and transitive only.

20 Let T be the set of all triangles in the Euclidean plane and let a relation R on T be defined as a R b, if a is congruent to b, $\forall a, b \in T$. Then R is

- (A) Reflexive but not transitive (B) Transitive but not symmetric
(C) Equivalence (d) None of these

21 Which of the following statement/statements is/are correct?

- (A) If R and S are two equivalence relations on a set A, then $R \cap S$ is also an equivalence relation on A.
(B) The union of two equivalence relations on a set is not necessarily relation on the set.
(C) The inverse of an equivalence relation is an equivalence relation. (d) All of above

22 Let $f : R \rightarrow R$ be defined as $f(x) = x^4$.

- (A) f is one-one onto (B) f is many-one onto
(C) f is one-one but not onto (d) f is neither one-one nor onto

23 Set A has 3 elements and the set B has 4 elements then numbers of injective functions that can be defined from set A to set B is:

- (A) 120 (B) 24 (C) 144 (d) 64

24 Consider the set $A = \{4, 5\}$. The smallest equivalence relation (i.e. the relation with the least number of elements), is:

- (A) $\{\}$ (B) $\{(4, 5)\}$ (C) $\{(4, 4), (5, 5)\}$ (d) $\{(4, 5), (5, 4)\}$

25. If a function $f : [2, \infty) \rightarrow B$ defined by $f(x) = x^2 - 4x + 5$ is a bijection, then B =

- (A) R (B) $[1, \infty)$ (C) $[4, \infty)$ (d) $[5, \infty)$

26. Which of the following functions from Z to itself are bijection?

- (A) $f(x) = x^3$ (B) $f(x) = x + 2$ (C) $f(x) = 2x + 1$ (d) $f(x) = x^2 + x$

27. A function f from the set of natural numbers to integers

$$f(n) = \begin{cases} n-1/2 & \text{when } n \text{ is odd} \\ -n/2 & \text{when } n \text{ is even} \end{cases}$$

- (A) one-one but not onto (B) onto but not one-one
(C) one-one and onto both (d) neither one-one nor onto

28. In the set Z of all integers, which of the following relation R is not an equivalence relation?

- (A) $x R y : \text{if } x \leq y$ (B) $x R y : \text{if } x = y$
(C) $x R y : \text{if } x - y \text{ is an even integer}$ (d) none

29. Domain of the function $f(x) = \sqrt{64 - x^2}$ is

- (A) $[-8, 8]$ (B) $[-16, 16]$ (C) $[0, 4]$ (d) $[-5, 5]$

30. Let $f : R \rightarrow R$ be defined by $f(x) = \{2x : x > 3, x^2 : 1 < x \leq 3, 3x : x \leq 1\}$

- Then $f(-1) + f(2) + f(4)$ is:
(A) 5 (B) 14 (C) 9 (d) None of these

Q31 If $f: R \rightarrow R$ be the function defined by $f(x) = x^3 + 5$, then $f^{-1}(x)$ is

- a) $(x+5)^{1/3}$ b) $(x-5)^{1/3}$ c) $(5-x)^{1/3}$ d) $5-x$

Q34 Let $A = \{1, 2, 3\}$, define a relation R in the set A as $R = \{(1, 1), (2, 2), (3, 3), (1, 3)\}$, then which of the following ordered pairs should be added to R to make it the smallest equivalence relation?

- a) $(1, 3)$ b) $(3, 1)$ c) $(2, 1)$ d) $(1, 2)$

Q35 Let $f: R \rightarrow R$ be a function given by $f(x) = [x] \forall x \in R$, then $f(x)$ is

- (a) One-one (b) Onto
(c) Both one-one and onto (d) Neither one-one nor onto

Q36 Let $f: N \rightarrow N$ be defined by $f(1) = f(2) = 1$ and $f(x) = x - 2, x > 2$, then $f(x)$ is

- (a) One-one onto (b) Many-one onto
(c) One-one but not onto (d) Many-one but not onto

Q37 If $A = \{1, 2, 3, \dots, n\}$ and $B = \{a, b\}$ then the number of surjections from A into B is

- (a) $n P 2$ (b) $2^n - 1$ (c) $2^n - 2$ (d) $n^2 - n$

38 If the set A has 4 elements and set B has 5 elements, then the number of onto functions from A into B is

- a) 12 b) 10 c) 79 d) 0

39 If the number of elements in set A is 5 and number of elements in set B is 4 then the number of one-one functions from A into B is

- a) 0 b) 5 c) 20 d) 18

40 If set A has 4 elements and set B has 3 elements then the number of onto functions from A into B is

- a) 81 b) 0 c) 36 d) 45

Q41 Let R be a relation on R (set of reals) defined by $R = \{(a, b) : a \leq b\}$, then R is

- (a) An equivalence relation
(b) Reflexive, symmetric but not transitive
(c) Symmetric, transitive but not reflexive
(d) Reflexive, and transitive but not symmetric.

42 Let R be a relation on R (set of reals) defined by $R = \{(a, b) : a \leq b^2\}$, R is

- a) Reflexive, and transitive but not symmetric.
b) Neither reflexive nor symmetric nor transitive
c) Symmetric, transitive but not reflexive
d) Reflexive, symmetric but not transitive

43 Let $A = \{x \in Z : 0 \leq x \leq 10\}$ and R be a relation on A defined as $R = \{(a, b) : a, b \in A, a - b \text{ is divisible by } 3\}$, then the equivalence class $[2]$ is

- a) $\{2, 5, 8\}$ b) $\{0, 3, 8\}$ c) $\{3, 6, 9\}$ d) None of these.

44 A function $f: X \rightarrow Y$ is onto if and only if

- (a) Range of $f = Y$ (b) Range of $f \subset Y$

(c) Range of $f \supset Y$ (d) Range of $f \neq Y$

45 Let $f: N - \{1\} \rightarrow N$ be defined by, $f(n) =$ the highest prime factor of n , then f is

- a) One-one onto b) One-one but not onto
c) Neither one-one nor onto d) Onto but not one-one

46 The function $f: A \rightarrow B$ defined by $f(x) = 4x + 7, x \in R$ is (a) one-one (b) Many-one (c) Odd (d) Even

47 The smallest integer function $f(x) = [x]$ is

- (a) One-one (b) Many-one (c) Both (a) & (b) (d) None of these

48 Let $A = R - \{3\}, B = R - \{1\}$. Let $f: A \rightarrow B$ be defined by $f(x) = x^2 - 2x - 3$. Then,

- (a) f is bijective (b) f is one-one but not onto
(c) f is onto but not one-one (d) None of these

49 The number of bijective functions from set A to itself when A contains 106 elements is-

- (a) 106 (b) $(106)!$ (c) $106!$ (d) 2106

50 Let T be the set of all triangles in the Euclidean plane, and let a relation R on T be defined as aRb if a is congruent to $b \forall a, b \in T$. Then R is

- (a) reflexive but not transitive (c) equivalence
(b) transitive but not symmetric (d) None of these

51 The maximum number of equivalence relations on the set $A = \{1, 2, 3\}$ are (a) 1 (b) 2 (c) 3 (d) 5

52 Let us define a relation R in R as aRb if $a \geq b$. Then R is

- (a) an equivalence relation
(b) reflexive, transitive but not symmetric
(c) symmetric, transitive but not reflexive
(d) neither transitive nor reflexive but symmetric

53 Let $A = \{1, 2, 3\}$ and consider the relation $R = \{(1, 1), (2, 2), (3, 3), (1, 2), (2, 3), (1, 3)\}$. Then R is

- (a) reflexive but not symmetric
(b) reflexive but not transitive
(c) symmetric and transitive
(d) neither symmetric, nor transitive

54 Let $f: R \rightarrow R$ be defined by $f(x) = 1/x \forall x \in R$. Then f is

- (a) one-one (b) onto (c) bijective (d) f is not defined

54 Which of the following functions from Z into Z are bijective?

- (a) $f(x) = x^3$ (b) $f(x) = x + 2$
(c) $f(x) = 2x + 1$ (d) $f(x) = x^2 + 1$

55 Let R be a relation on the set N of natural numbers denoted by $nRm \Leftrightarrow n$ is a factor of m (i.e. $n \mid m$). Then, R is

- (a) Reflexive and symmetric
(b) Transitive and symmetric
(c) Equivalence
(d) Reflexive, transitive but not symmetric

56 Let $S = \{1, 2, 3, 4, 5\}$ and let $A = S \times S$. Define the relation R on A as follows: $(a, b) R (c, d)$ iff $ad = cb$. Then, R is

- (a) reflexive only (b) Symmetric only
(c) Transitive only (d) Equivalence relation

57 The relation $\{(a, b) : a \dots\}$

- 57 The relation R is defined on the set of natural numbers as $\{(a, b) : a = 2b\}$. Then, R^{-1} is given by
 (a) $\{(2, 1), (4, 2), (6, 3), \dots\}$
 (b) $\{(1, 2), (2, 4), (3, 6), \dots\}$
 (c) R^{-1} is not defined
 (d) None of these
- 58 Let $g(x) = x^2 - 4x - 5$, then
 (a) g is one-one on \mathbb{R} (b) g is not one-one on \mathbb{R}
 (c) g is bijective on \mathbb{R} (d) None of these
- 59 Let $A = \{x : -1 \leq x \leq 1\}$ and $f : A \rightarrow A$ is a function defined by $f(x) = x \lfloor x \rfloor$ then f is
 (a) a bijection
 (b) injection but not surjection
 (c) surjection but not injection
 (d) neither injection nor surjection
- 60 If $A = \{5, 6, 7\}$ and let $R = \{(5, 5), (6, 6), (7, 7), (5, 6), (6, 5), (6, 7), (7, 6)\}$. Then R is
 (A) Reflexive, symmetric but not Transitive
 (B) Symmetric, transitive but not reflexive
 (C) Reflexive, Transitive but not symmetric
 (D) an equivalence relation
- 61 Let R be a relation defined on \mathbb{Z} as follows:
 $(a, b) \in R \Leftrightarrow a^2 + b^2 = 25$. Then Domain of R is
 (A) $\{3, 4, 5\}$ (B) $\{0, 3, 4, 5\}$ (C) $\{0, \pm 3, \pm 4, \pm 5\}$ (D) None of these
- 62 The maximum number of equivalence relations on the set $A = \{a, b, c\}$ is
 (A) 1 (B) 2 (C) 3 (D) 5
- 63 Let R be a reflexive relation on a finite set A having n elements and let the re-ordered pairs in R , then
 (A) $m < n$ (B) $m > n$ (C) $m = n$ (D) None of these
- 64 The number of elements in set A is 3. The number of possible relations and let there can be defined on A is
 (A) 8 (B) 512 (C) 64 (D) 4
- 65 $4\mathbb{N}$ is the set of all natural numbers and R is a relation on $\mathbb{N} \times \mathbb{N}$ defined by $(a, b) R (c, d)$ if and only if $a + d = b + c$, then R is
 (A) only reflexive (B) only symmetric
 (C) only transitive (D) equivalence relation
- 66 The relation R defined on the set $A = \{1, 2, 3, 4, 5\}$, by $R = \{(a, b) : |a^2 - b^2| > 16\}$ is given by
 (A) $\{(1, 1), (2, 1), (3, 1), (4, 1), (2, 3)\}$
 (B) $\{(2, 2), (3, 2), (4, 2), (2, 4)\}$
 (C) $\{(3, 3), (4, 3), (5, 4), (3, 4)\}$
 (D) none of these
- 67 Let R be a relation on the set \mathbb{N} of natural numbers defined by aRb if and only if a divides b . Then R is
 (A) Reflexive and Symmetric (B) Transitive and Symmetric
 (C) Equivalence (D) Reflexive and Transitive but not symmetric
- 68 Consider the set $A = \{4, 5\}$. The smallest equivalence relation (i.e. there relation with the least number of elements), is
 (A) $\{\emptyset\}$ (B) $\{(4, 5)\}$ (C) $\{(4, 4), (5, 5)\}$ (D) $\{(4, 5), (5, 4)\}$
- 69 Let $P = \{a, b, c\}$. Then the number of Equivalence relations containing $\{(a, b)\}$ is
 (A) 1 (B) 2 (C) 3 (D) 4
- 70 Let $\{1, 2, 3\}$ and consider the relation $R = \{(1, 1), (2, 2), (3, 3), (1, 2), (2, 3), (1, 3)\}$. Then R is
 (A) Reflexive but not symmetric
 (B) reflexive but not transitive
 (C) Symmetric and transitive
 (D) neither symmetric, nor transitive
- 71 Let $A = \{1, 2, 3, \dots, n\}$ and $B = \{a, b\}$. Then the number of surjections from A to B is
 (A) $n!/(n-2)!$ (B) $2^n - 2$ (C) $2^n - 1$ (D) None of these
- 72 Let $f : \mathbb{R} \rightarrow \mathbb{R}$ be defined by $f(x) = 1/x, \forall x \in \mathbb{R}$. Then f is
 (A) one-one (B) onto (C) Bijective (D) f is not defined
- 74 Let $f : \mathbb{R} \rightarrow \mathbb{R}$ be defined as $f(x) = 3x$. Choose the correct answer.
 (A) f is one-one onto (B) f is many-one onto
 (C) f is one-one but onto (D) f is neither one-one nor onto
- 75 The maximum number of equivalence relations on the set $A = \{1, 2, 3\}$ are
 (A) 1 (B) 2 (C) 3 (D) 5
- 76 If $A = \{1, 2, 3\}$ and consider the relation $R = \{(1, 1), (2, 2), (3, 3), (1, 2), (2, 3), (1, 3)\}$, then R is
 (A) reflexive but not symmetric
 (B) reflexive but not transitive
 (C) symmetric and transitive
 (D) neither symmetric nor transitive
- 77 If $f : \mathbb{R} \rightarrow \mathbb{R}$ be defined by $f(x) = 1/x, \forall x \in \mathbb{R}$, then f is
 (A) one-one (B) onto (C) bijective (D) f is not defined
- 78 Let $A = \{1, 2, 3, 4\}$ and $B = \{1, 2\}$, then number of onto functions from A to B is
 (A) 14 (B) 16 (C) 12 (D) 8
- 79 The function $f : \mathbb{R} \rightarrow \mathbb{R}$ defined by $f(x) = 2x + 2 \lfloor x \rfloor$ is
 (A) one-one and onto (B) many one and onto
 (C) one-one and into (D) many one and into
- 80 The function $f : \mathbb{R} \rightarrow \mathbb{R}$ defined by $f(x) = (x-1)(x-2)(x-3)$ is
 (A) one-one but not onto
 (B) onto but not one-one
 (C) both one-one and onto
 (D) neither one-one nor onto
- 90 If $A = \{5, 6, 7\}$ and let $R = \{(5, 5), (6, 6), (7, 7), (5, 6), (6, 5), (6, 7), (7, 6)\}$. Then R is
 (a) Reflexive, symmetric but not Transitive
 (b) Symmetric, transitive but not reflexive
 (c) Reflexive, Transitive but not symmetric
 (d) an equivalence relation
- 93 Consider the set $A = \{1, 2\}$. The relation on A which is symmetric but neither transitive nor reflexive is
 (a) $\{(1, 1), (2, 2)\}$ (b) $\{\}$
 (c) $\{(1, 2)\}$ (d) $\{(1, 2), (2, 1)\}$

- 103 Let $R = \{(a, b) | (b, a) \in R\}$ then R is
 (a) Reflexive, symmetric but not transitive
 (b) Symmetric, transitive but not reflexive
 (c) Reflexive, Transitive but not symmetric
 (d) an equivalence relation
- 104 Let R be a reflexive relation on a finite set A having n elements and let there be m ordered pairs in R , then
 (a) $m > n$ (b) $m < n$ (c) $m = n$ (d) none of these
- 105 The number of elements in set A is 3. The number of possible relations that can be defined on A is
 (a) 8 (b) 4 (c) 24 (d) 512
- 106 The number of elements in set A is 3. The number of possible reflexive relations that can be defined in A is
 (a) 24 (b) 8 (c) 512 (d) 4
- 107 The number of elements in set P is 4. The number of possible symmetric relations that can be defined on P is
 (a) 16 (b) 32 (c) 512 (d) 1024
- 108 Let $P = \{a, b, c\}$. Then the number of Equivalence relations containing (a, b) is
 (a) 2 (b) 3 (c) 3 (d) 4
- 109 A relation R on a set A is said to be reflexive if
 (i) $\forall a \in A, (a, a) \in R$
 (ii) $\exists (a, b) \in R \Rightarrow (b, a) \in R$
 (iii) $\exists (a, b) \in R$ and $(b, c) \in R \Rightarrow (a, c) \in R$
 (iv) $\forall a, b \in A, (a, b) \in R$
- 110 If $R = \{(2, 3)\}$ is a relation on the set $\{1, 2, 3\}$ then R is
 (i) Reflexive (ii) Symmetric (iii) Transitive (iv) Equivalence
- 111 If a relation R on the set $\{4, 5, 6\}$ be defined by $R = \{(4, 5), (5, 4), (4, 4)\}$ then R is
 (i) Reflexive (ii) Symmetric
 (iii) Transitive (iv) Symmetric and transitive
- 112 If a relation R on the set $A = \{3, 4, 5\}$ be defined by $R = \{(3, 4), (4, 3), (3, 3), (4, 4)\}$ then R is
 (i) Reflexive (ii) Symmetric
 (iii) Transitive (iv) Symmetric and transitive
- 113 R is a relation on a set $A = \{1, 2\}$ then R is reflexive if
 (i) $(1, 1) \in R$ (ii) $(2, 2) \in R$ (iii) $(1, 1), (2, 2) \in R$ (iv) $(1, 1), (2, 2) \in R$
- 114 The relation $R = \{(3, 5), (6, 6), (7, 7)\}$ defined on the set $\{5, 6, 7\}$ is
 (i) Reflexive only (ii) Symmetric only
 (iii) Transitive only (iv) An Equivalence relation
- 115 If $R = \{(a, b) | 2 \text{ divides } (a - b)\}$ be the equivalence relation on the set $A = \{0, 1, 2, 3, 4, 5\}$ then the equivalence class $[0]$ is given by
 (i) $\{0, 2, 4\}$ (ii) $\{1, 3, 5\}$ (iii) $\{2, 4\}$ (iv) $\{3, 5\}$
- 116 If R be the relation perpendicular on the set of lines then R is
 (i) Reflexive only (ii) Symmetric only
 (iii) Transitive only (iv) An Equivalence relation
- 117 The function $f: [0, \infty) \rightarrow [0, 1]$ be defined by $f(x) = x/x+1$ then f is
 (i) One-one and onto (ii) One-one but not onto
 (iii) Onto but not one-one (iv) Neither one-one nor onto
- 118 The function $f: [-1, 1] \rightarrow R$ defined by $f(x) = x/x+2$ is
 (i) One-one and onto (ii) One-one but not onto
 (iii) Onto but not one-one (iv) Neither one-one nor onto
- 119 The function $f: N \rightarrow N$ defined by $f(x) = x - 1$ and $f(1) = f(2) = 1$ for every $x > 2$ is
 (i) One-one and onto (ii) One-one but not onto
 (iii) Onto but not one-one (iv) Neither one-one nor onto
- 120 Let $E = \{1, 2, 3, 4\}$ and $F = \{1, 2\}$ then the number of functions from E to F is
 (i) 34 (ii) 16 (iii) 12 (iv) 8
- 121 If $A = \{1, 2, 3, 4\}$ and $B = \{3, 5, 7, 8, 9\}$ and $f: A \rightarrow B$ be defined by $f(x) = 2x + 1$ then f is
 (i) One-one and onto (ii) One-one but not onto
 (iii) Onto but not one-one (iv) Neither one-one nor onto
- 122 If R be the relation on Z defined by $R = \{(a, b) : ab > -1\}$ then R is
 (i) Reflexive and transitive but not symmetric
 (ii) Symmetric and transitive but not reflexive
 (iii) Reflexive and symmetric but not transitive
 (iv) An equivalence relation
- 123 Let $A = \{x, y, z\}$. Then the number of equivalence relations containing (y, z) and (z, y) is
 (A) 1 (B) 2 (C) 3 (D) 4
- 124 The number of relations on a set having 3 elements is
 (A) 512 (B) 8 (C) 16 (D) 32
- 125 A one - one function $f: \{a, b, c\} \rightarrow \{a, b, c\}$ is
 (A) onto (B) not onto (C) not bijective (D) none of these
- 126 A real function from R to R defined by $f(x) = 7 - 6x$ is
 (A) one - one (B) onto
 (C) one - one and onto function (D) neither one - one nor onto
- 127 A real function from R to R defined by $f(x) = |x| + 1$ is
 (A) one - one (B) onto
 (C) one - one and onto function (D) neither one - one nor onto
- 128 The number of bijective functions from set A to itself when A contains 6 elements is
 (A) 6 (B) 6! (C) 62 (D) 26
- 129 The maximum number of equivalence relations on the set $A = \{p, q, r\}$ is
 (A) 1 (B) 2 (C) 3 (D) 5
- 130 The relation $R = \{(1, 1), (2, 2)\}$ defined on the set $A = \{1, 2, 3\}$ is
 (A) transitive (B) not transitive
 (C) reflexive (D) not symmetric

onto
1x1

- 124 The greatest integer function $f(x) = [x]$ defined from \mathbb{R} to \mathbb{R} is
(A) injective function (B) surjective function
(C) bijective function (D) neither injective nor surjective function
- 125 If $n(A) = m$ and $n(B) = n$, then the number of relations from A to B is
(A) mn (B) $m+n$ (C) 2^{mn} (D) m^n
- 126 A relation $R = \{(a,a), (a,b), (b,a)\}$ defined on a set $A = \{a,b\}$ is
(A) reflexive but not transitive
(B) transitive and symmetric
(C) transitive
(D) symmetric but not reflexive
- 127 The number of one-one functions from $A = \{1,2,3,4,5, \dots, n\}$ to itself is
(A) n (B) n^2 (C) $2n$ (D) $n!$
- 128 Consider a set $A = \{x,y\}$. The equivalence relation on A with least number of elements is
(A) $\{ \}$ (B) $\{(x,x)\}$ (C) $\{(x,y), (y,x)\}$ (D) $\{(x,x), (y,y)\}$
- 129 Number of reflexive relations on the set $A = \{1,2\}$ is
(A) 1 (B) 2 (C) 4 (D) 8
- 130 If set $A = \{1,2,3\}$ and a relation $R = \{(1,2), (2,1)\}$, the relation R will be
(A) reflexive if $(1,1)$ is added (B) symmetric if $(2,3)$ is added
(C) transitive if $(1,1)$ is added (D) symmetric if $(3,2)$ is added
- 131 If set $A = \{a,b,c\}$. An identity relation in set A is
(A) $R = \{(a,b), (a,c)\}$ (B) $R = \{(a,a), (b,b), (c,c)\}$
(C) $R = \{(a,a), (b,b), (c,c), (a,c)\}$ (D) $R = \{(c,a), (b,a), (a,a)\}$
- 132 Set A has 3 elements and the set B has 4 elements. Then the number of injective functions that can be defined from set A to set B is
(A) 144 (B) 12 (C) 24 (D) 64
- 133 The maximum number of equivalence relations on the set $A = \{1,2,3\}$ are
(A) 1 (B) 2 (C) 3 (D) 5
- 134 Given triangles with sides $T_1 : 3, 4, 5$; $T_2 : 5, 12, 13$; $T_3 : 6, 8, 10$; $T_4 : 4, 7, 9$ and a relation R in set of triangles defined as $R = \{(\Delta_1, \Delta_2) : \Delta_1 \text{ is similar to } \Delta_2\}$. Which triangles belong to the same equivalence class?
(A) T_1 and T_2 (B) T_2 and T_3 (C) T_1 and T_3 (D) T_1 and T_4
- 135 Let R be a relation on the set L of lines defined as $R = \{ (L_1, L_2) : L_1 \text{ is perpendicular to } L_2 \}$ then relation R is
(A) reflexive and symmetric (B) symmetric and transitive
(C) equivalence relation (D) symmetric
- 136 If relation R in the set $\{1,2,3\}$ given by $R = \{(1,1), (2,2), (3,3), (1,2), (2,3)\}$ is
(A) reflexive (B) symmetric (C) transitive
(D) equivalence relation
- 137 Let $A = \{1, 2, 3\}$ and consider the relation $R = \{(1, 1), (2, 2), (3, 3), (1, 2), (2, 3), (1, 3)\}$. Then R is
(A) reflexive but not symmetric
(B) reflexive but not transitive
(C) symmetric and transitive
(D) neither symmetric, nor transitive
- 139 The function $f : \mathbb{R} \rightarrow \mathbb{R}$ defined as $f(x) = x^2$ then
(A) f is one-one onto (B) f is many-one onto
(C) f is one-one but not onto (D) f is neither one-one nor onto
- 140 The function $f : \mathbb{R} \rightarrow \mathbb{R}$ defined as $f(x) = 3x$ then
(A) f is one-one onto (B) f is many-one onto
(C) f is one-one but not onto (D) f is neither one-one nor onto
- 141 The function $f : \mathbb{R} \rightarrow \mathbb{R}$ defined as $f(x) = |x|$ then
(A) f is one-one onto (B) f is many-one onto
(C) f is one-one but not onto (D) f is neither one-one nor onto
- 142 Let $A = \mathbb{R} - \{3\}$ and $B = \mathbb{R} - \{1\}$. Consider the function $f : A \rightarrow B$ defined by $f(x) = (x-2)/(x-3)$ then
(A) f is one-one onto (B) f is many-one onto
(C) f is one-one but not onto (D) f is neither one-one nor onto
- 143 The signum function $f : \mathbb{R} \rightarrow \mathbb{R}$
Given function is $f(x) = \begin{cases} 1, & \text{if } x > 0 \\ 0, & \text{if } x = 0 \\ -1, & \text{if } x < 0 \end{cases}$
Then f is
(A) one-one onto (B) many-one onto
(C) one-one but not onto (D) neither one-one nor onto
- 144 If R is a relation from the non-empty set A to a non-empty set B , then
(a) $R = A \cup B$ (b) $R = A \cap B$ (c) $R = A \times B$ (d) R is the subset of $A \times B$
- 145 Let R be the relation defined on $\mathbb{N} \times \mathbb{N}$ by the rule
(a, b) R (c, d) implies $a+d = b+c$, then R is
(a) Reflexive (b) symmetric (c) transitive (d) all of these
- 146 The domain of the function $f = \{(1,3), (3,5), (2,5)\}$ is
(a) 1, 3 and 2 (b) $\{1,3,2\}$ (c) $\{3,5,6\}$ (d) 3, 5 and 6
- 147 The smallest integer function $f(x) = [x]$ is
(a) One-one (b) many-one (c) both (d) none of these
- 148 Let $X = \{0, 1, 2, 3\}$ and $Y = \{-1, 0, 1, 4, 5\}$ and a function $f : X \rightarrow Y$
a) One-one onto (b) one-one into
c) many one onto (d) many one into
- 149 Let $X = [-1, 0, 1]$, $Y = \{0, 2\}$ and a function $f : X \rightarrow Y$ defined by $y = 2x^2$, is
(a) One-one onto (b) one-one into
c) many one onto (d) many one into
- 151 Let R be an equivalence relation on a finite set A having n elements. Then the number of ordered pair in R is
(a) $< n$ (b) $\geq n$ (c) $< n$ or $= n$ (d) none of these
- 152 If R and R' are the symmetric relation on a set A then the relation $R \cap R'$ is

a) Reflexive b) symmetric c) Transitive d) none of these

153 Let R be the relation on the set of all real numbers defined by aRb iff $|a-b| \leq 1$, then R is

a) Reflexive and Transitive b) symmetric only
c) Transitive only d) anti symmetric only

154 Which of the following functions is one-one?

a) $3-x/3+x$ b) \sqrt{x} c) x^2+1 d) none of these

155 If $f(x) = x^2 - 3x + 1$ and $f(2k) = 2f(k)$, then k is equal to

a) $\sqrt{2}$ b) $1/\sqrt{3}$ c) $-1/\sqrt{2}$ or $-1/\sqrt{2}$ d) none of these

156 Let $f: \mathbb{R} \rightarrow \mathbb{R}$ be defined by $f(x) = 1/x$ for all x elements of \mathbb{R} , then f is

a) One-one b) onto c) bijective d) none of these

157 If a relation R on the set $\{1, 2, 3\}$ be defined by $R = \{(1, 2)\}$, then R is

a) Reflexive b) transitive c) symmetric d) none of these

158 The maximum number of equivalence relations on the set $A = \{1, 2, 3\}$ are a) 1 b) 2 c) 3 d) 5

159 Greatest integer function $f(x) = [x]$ is

a) One-one b) Many-one c) Both (a) & (b) d) None of these

160 Which of the following functions from \mathbb{Z} into \mathbb{Z} are bijective?

a) $f(x) = x^2$ b) $f(x) = x + 2$ c) $f(x) = 2x + 1$ d) $f(x) = x^2 + 1$

161 Let T be the set of all triangles in the Euclidean plane, and let a relation R on T be defined as aRb if a is congruent to $b \forall a, b \in T$. Then R is

a) reflexive but not transitive relation
b) transitive but not symmetric relation
c) equivalence relation d) None of these

162 Let $A = \{1, 2, 3\}$ and consider the relation $R = \{(1, 1), (2, 2), (3, 3), (1, 2), (2, 3), (1, 3)\}$. Then R is

a) reflexive, transitive but not symmetric
b) reflexive but not transitive
c) symmetric and transitive
d) neither symmetric, nor transitive

163 Total number of equivalence relations defined in the set $S = \{a, b, c\}$ is a) 5 b) 3! c) 32 d) 3

164 If \mathbb{N} be the set of all-natural numbers, consider $f: \mathbb{N} \rightarrow \mathbb{N}$ such that $f(x) = 2x, \forall x \in \mathbb{N}$, then f is

a) one-one onto b) one-one into
c) many-one onto d) None of these

165 If $f(x) + 2f(1-x) = x^2 + 2 \forall x \in \mathbb{R}$, then $f(x) =$

a) $x^2 - 2$ b) 1 c) $(x-2)^2/3$ d) None of these

166 Consider the non-empty set consisting of children is a family and a relation R defined as aRb if a is brother of b . Then R is

a) symmetric but not transitive
b) transitive but not symmetric
c) neither symmetric nor transitive
d) both symmetric and transitive

167 Let a relation T on the set \mathbb{R} of real numbers be $T = \{(a, b) : 1 + ab < 0, a, b \in \mathbb{R}\}$. Then from among the ordered pairs $(1, 1), (1, 2), (1, -2), (2, 2)$, the only pair that belongs to T is a) $(2, 2)$ b) $(1, 1)$ c) $(1, -2)$ d) $(1, 2)$

168 Let $C = \{(a, b) : a^2 + b^2 = 1; a, b \in \mathbb{R}\}$ a relation on \mathbb{R} , set of real numbers. Then C is

a) Equivalence relation b) Reflexive
c) Transitive d) Symmetric

169 Number of relations that can be defined on the set $A = \{a, b, c, d\}$ is a) 23 b) 44 c) 42 d) 216

170 Which one of the following relations on set of real numbers is an equivalence relation?

a) $aRb \Leftrightarrow a \geq b$ b) $aRb \Leftrightarrow |a| = |b|$
c) $aRb \Leftrightarrow a > b$ d) $aRb \Leftrightarrow a < b$

171 R is an equivalent relation on the set $A = \{1, 2, 3, 4, 5\}$ defined by $R = \{(x, y) : |x - y| \text{ is even}\}$. Then find the class [1]

a) $\{1\}$ b) $\{1, 3, 5\}$ c) $\{2, 4\}$ d) $\{1, 3\}$

172 The number of bijective functions from set A to itself when A contains 105 elements is

a) 105 b) $(105)^2$ c) $105!$ d) $2 \cdot 105$

173 Let $f: \mathbb{R} \rightarrow \mathbb{R}$ be defined by $f(x) = x^4$. Then $f(x)$ will be

a) one-one onto b) one-one into
c) many-one onto d) many-one into

174 The relation R in the set $\{1, 2, 3\}$ defined by $R = \{(1, 3), (1, 1), (3, 1)\}$ is:

a) Symmetric and transitive but not reflexive
b) Reflexive and symmetric but not transitive
c) Symmetric but neither reflexive nor transitive
d) An equivalence relation.

178 Let L be the set of all straight lines in the Euclidean plane. Two lines l_1 and l_2 are said to be related by the relation R iff $l_1 \parallel l_2$. Then the relation R is:

a) Reflexive b) Symmetric
c) Transitive d) Equivalence

179 Let $A = \{a, b, c\}$. Which of the following is not an equivalence relation in A ?

a) $R_1 = \{(a, b), (b, c), (a, c), (a, a)\}$
b) $R_2 = \{(c, b), (c, a), (c, c), (b, b)\}$
c) $R_3 = \{(a, a), (b, b), (c, c), (a, b)\}$
d) None of these.

180 Let W denote the words in the English dictionary. Define the relation R by

$R = \{(x, y) \in W \times W : \text{the words } x \text{ and } y \text{ have at least one letter common}\}$. Then R is:

a) Not reflexive, symmetric and transitive
b) reflexive, symmetric and not transitive
c) reflexive, symmetric and transitive
d) reflexive, not symmetric and transitive.

189 Consider the non-empty set consisting of children in a family and a relation R define as aRb if a is sister of b . then R is

- (A) Symmetric but not Transitive
 (B) Transitive but not symmetric
 (C) neither symmetric nor transitive
 (D) both symmetric and transitive

202 Let $f: R \rightarrow R$ be defined as $f(x) = 3x$, then f is
 (a) one-one onto (b) Many one onto
 (c) One - one but not onto (d) Neither one-one nor onto

203 The function $f: R \rightarrow R$ defined as $f(x) = x^2 + 2$ is

- (a) one-one (b) onto
 (c) One - one but not onto (d) Neither one-one nor onto

204 If R is a relation on the set $A = \{a, b, c\}$ given by $R = \{(a, a), (b, b), (c, c)\}$, then R is

- (a) Reflexive only (b) Symmetric only
 (c) Transitive only (d) equivalence

209 The set of all elements related to 1 in the set $\{x \in Z : 0 \leq x \leq 12\}$, where relation R is defined by $R = \{(a, b) : a - b \text{ is a multiple of } 4\}$ is

- (a) $\{2, 4, 6\}$ (b) $\{1, 5, 9\}$ (c) $\{1, 7, 12\}$ (d) None of the above

210 Let R be the equivalence relation in the set $A = \{0, 1, 2, 3, 4, 5\}$ given by $R = \{(a, b) : 2 \text{ divides } a - b\}$, then the equivalence class $[0]$ is

- (a) $\{3, 5\}$ (b) $\{1, 2\}$ (c) $\{2, 4\}$ (d) $\{1, 3\}$

215 The function $f: R \rightarrow R$ given by $f(x) = x - [x]$ is

- (a) one - one but not onto (b) onto but not one-one
 (c) bijective (d) neither one - one nor onto

218 Let R be a relation on the set N of natural numbers defined by $n R m$ if n divides m then R is-

- (a) Reflexive and symmetric. (b) Transitive and symmetric.
 (c) Equivalence. (d) Reflexive, transitive but not symmetric

219 Consider the set $A = \{1, 2, 3\}$ & R be the smallest equivalence relation on A , then R is equal to

- (a) $\{(1, 1), (2, 2)\}$ (b) $\{(1, 1), (2, 2), (3, 3)\}$
 (c) $\{(1, 1), (2, 2), (3, 3), (1, 2), (2, 1)\}$ (d) None of these

220 If $A = \{a, b, c, d\}$ and $f = \{(a, b), (b, d), (c, a), (d, c)\}$ then f is

- (a) onto but not one-one (b) one-one but not onto
 (c) one-one onto (d) many one onto

227 The relation

$R = \{(x, x^2) : x \text{ is a prime number less than } 7\}$ in roster form

- (a) $\{(2, 8), (3, 27), (5, 125), (7, 343)\}$

- (b) $\{(2, 8), (3, 27)\}$

- (c) $\{(2, 8), (3, 27), (5, 125)\}$

- (d) None of these

230 Let N be the set of all natural numbers and the function $f: N \rightarrow N$ be defined by $f(n) = 2n + 3, \forall n \in N$. then f is (a) surjective (b) injective

- (c) bijective (d) none of these

Sherlin and Danju are playing Ludo at home during Covid-19. While rolling the dice, Sherlin's sister Raji observed and noted the possible outcomes of the throw every time belongs to set $\{1, 2, 3, 4, 5, 6\}$. Let A be the set of players while B be the set of all possible outcomes.

$A = \{S, D\}, B = \{1, 2, 3, 4, 5, 6\}$

1. Let $f: B \rightarrow B$ be defined by $R = \{(x, y) : y \text{ is divisible by } x\}$ is

- a. Reflexive and transitive but not symmetric
 b. Reflexive and symmetric and not transitive
 c. Not reflexive but symmetric and transitive
 d. Equivalence

2. Raji wants to know the number of functions from A to B . How many number of functions are possible?

- a. 6^2
 b. 2^6
 c. $6!$
 d. 2^{12}

3. Let R be a relation on B defined by $R = \{(1, 2), (2, 2), (1, 3), (3, 4), (3, 1), (4, 3), (5, 5)\}$. Then R is

- a. Symmetric
 b. Reflexive
 c. Transitive
 d. None of these three

4. Raji wants to know the number of relations possible from A to B . How many numbers of relations are possible?

- a. 6^2
 b. 2^6
 c. $6!$
 d. 2^{12}

5. Let $R: B \rightarrow B$ be defined by $R = \{(1, 1), (1, 2), (2, 2), (3, 3), (4, 4), (5, 5), (6, 6)\}$, then R is

- a. Symmetric
 b. Reflexive and Transitive
 c. Transitive and symmetric
 d. Equivalence

ANSWERS

1. (a) Reflexive and transitive but not symmetric
 2. (a) 6^2
 3. (d) None of these three
 4. (d) 2^{12}
 5. (b) Reflexive and Transitive

Garhi
Aditya Harhi
POT (Kali)

Aditya

Subject : Biology

Summer Holiday Homework
Class - 12th
Subject – Biology

Solve all the questions in your HW notebook except Q.10

- Q.1. Describe all the parts of typical flower with the help of diagram.
- Q.2. Describe the process of microsporogenesis.
- Q.3. Describe the process of megasporogenesis.
- Q.4. Give the concept of some outbreeding devices technique.
- Q.5. explain the process of Post fertilization events in plants.
- Q.6. Describe male reproductive system.
- Q.7. Describe Female reproductive system.
- Q.8. explain the process of Spermatogenesis in Humans with the help of flow chart.
- Q.9. Explain the process of oogenesis in female with the help of flow chart.
- Q.10. Complete Practical part of your syllabus in practical file.

Trija
Adarsh

Subject: Computer Science

Subject: Computer Science

- Select a Topic for project and select your group members as well. You can work in a group of 2 to 3 people at max. For selecting a topic you can visit local businesses and ask them about the problems that they are facing. For example, if a business is finding it hard to create invoices for filing GST claims, then you can do a project that takes the raw data (list of transactions), groups the transactions by category, accounts for the GST tax rates, and creates invoices in the appropriate format. you can be extremely creative here. You can use a wide variety of Python libraries to create user friendly applications such as games, software for their school, software for their disabled fellow students, and mobile applications, Of course to do some of these projects, some additional learning is required. You should know how to teach yourself. You should avoid plagiarism and violations of copyright issues while working on projects.
- Decide which features you want to implement in your project and accordingly do programming for front-end in python.

Subject Teacher.
~~Pratik~~
Nitesh Jain,
Pgt (CS)

Rodhani
Vice-Principa

Commerce Stream:

Subject: Accounts

HOLIDAY HOMEWORK CLASS-XII SUBJECT- ACCOUNTANCY

Q.1 Write and learn the following rate of depreciation used in the present life?

Items	Rate%
Building	10
Furniture, Fixtures	10
Library Books	10
Office Equipments	15
Vehicles	15
Computer/Peripherals/Computer Software	20
Hostel Equipments	10
Games & Estates	10
Other Fixed Assets	10

Q.2 A, B and C are partners with fixed capitals of 1,00,000, 200,000 and 3,00,000 respectively. Their partnership deed provides that :

- A is to be allowed a monthly salary of 600 and B is to be allowed a monthly salary of 400.
- C will be allowed a commission of 5% of the net profit after allowing salaries of A and B.
- Interest is to be allowed on capitals @ 6%.
- Interest will be charged on partners annual drawings at 4%.
- The annual drawings were :B 10,000 and C 15,000.

The net profit for the year ending 31st march, 2014 amounted to 1,72,000. Prepare P&L Appropriation account & partner's capital account.

Q.3 David and John were partners in a firm sharing profits in the ratio of 4 : 1. Their capitals on 1.4.2006 were : David Rs.2,50,000 and John Rs.50,000. The partnership deed provided that David will get a commission of 10% on the net profit after allowing John to earn a salary of Rs.2,500 per month. The profit of the firm for the year ended 31.3.2007 was Rs.1,40,000. Prepare Profit and Loss Appropriation Account for the year ended 31.3.2007.

X and Y are partners in firm sharing profits equally. Their capitals on 31st March 2014 were Rs.2,40,000 and Rs.1,80,000 respectively. Drawings of the partners to the date were Rs.40,000 and Rs.60,000 respectively. Profit for the year was Rs.1,60,000.

Calculate interest on capital @ 8 % p.a. for the year ended 31st March 2014.

Q.4 Calculate interest on drawings of Mr.Vinod @ 8% p.a. for the year ended 31st March,2014 in each of the following cases:

Case 1: If he withdrew Rs.2,000 at the beginning of each year. Case 2: If he withdrew Rs.2,000 during the middle of each month. Case 3: If he withdrew Rs.2,000 at the end of each month

Q.5 Calculate interest on A' drawing :

- If he has withdrawn 60,000 on 1stoct. 2006 and the rate of interest on drawing is 8% per annum.
- If he has withdrawn 60,000 on 1stoct. 2006 and the rate of interest on drawing is 8% . Books are closed on 31st march 2007.

Q.6 A , B and C are partners in a firm. On 1-4-2010 their capital stood at 50,000 25,000 25,000 respectively. As per provisions of the partnership deed :

- (a) C was entitled to a salary of 1,000p.m.
- (b) Partners were entitled to interest on capital at 5%p.a.
- (c) Profits were to be shared in the ratio of capital.

The net profit for the year ended 2011 of 33,000.

Prepare P&L Appropriation account & partner's capital account.

Q.7 What are the rules applicable in the absence of partnership deed ?

Q.8 differentiate between partner's fixed capital & partner's fluctuating capital ?

Q.9 Write formula's related to interest on drawing?

Q.10 What are the various type of partners? Discuss.

Arati

[Signature]

Subject: IP

Subject: Informatics Practices

- > Select a Topic for project and select your group members as well. You can work in a group of 2 to 3 people at max. The aim of the class project is to create tangible and useful IT application. You may identify a real-world problem by exploring the environment. e.g. you can visit shops/business places, communities or other organizations in your locality and enquire about functioning of the organization, and how data are generated, stored, and managed. You can take data stored in csv or database file and analyze using Python libraries and generate appropriate charts to visualize. If an organization is maintaining data offline, then you should create a database using MySQL and store the data in tables. Data can be imported in Pandas for analysis and visualization. You can use Python libraries of your choice to develop software for school or any other social good. You should avoid plagiarism and violation of copyright issues while working on project.
- > Decide which features you want to implement in your project and accordingly do programming for front-end in python.
- > Also decide how data will be stored and accordingly design the database

Subject Teacher.
~~Pratik~~
Nitesh Jain,
PPT(CS)

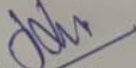
[Signature]
Vice-Principal

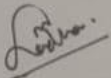
Subject: Economics

SUMMER HOLIDAY HOMEWORK

CLASS :12TH B ECONOMICS

1. Differentiate between microeconomics and macroeconomics
What do you mean by CIRCULAR FLOW OF INCOME? Explain its different phases in details.
2. Differentiate between stock and flow on the basis meaning, time dimension, nature of concepts and atleast 6 examples.
3. Write about types of circular flow? As real flow and money flow.
4. Describe four sectors of an economy
5. Introduce the following terms:-
 - i) Domestic Territory
 - ii) Normal residents
 - iii) Factor income and transfer income
 - iv) Final goods and intermediate goods
 - v) Consumption goods and capital goods
 - vi) Net investment and gross investment
 - vii) NIT
 - viii) Subsidies
 - ix) Factor cost and market price
 - x) Tell about NFIA and its components
 - xi) Define various aggregates of national income?
7. Differentiate between National income and Domestic income?
8. Write the steps of value added method and its precautions.
9. What do you understand by problem of double counting? How can you avoid it.
10. What is income method to calculate national income? Write about components of factor income.
11. Explain the steps of income method and its precautions?
12. What do you mean by expenditure method? Explain the components of final expenditure.
13. Practice items about treatment of the different items in the national income.
14. Solve 10-10 Numerical Questions of value added method, Income method and Expenditure method?
15. Define the following:-
 - 1) Nominal GDP and real GDP
 - 2) National income at current price and constant price
16. Write about GDP Deflator (or price index) with formulae?
17. Write short notes on GDP and welfare?


HMKAUSHIK



Subject: Business Studies

CLASS- XII

HOLIDAY HOMEWORK

SUB.- BUSINESS STUDIES

TOPIC: NATURE AND SIGNIFICANCE OF MANAGEMENT

- 1 Management is.....through others.
- 2is doing the task with minimum cost.
3. Best Foods Limited is to produce 20,000 packets of 'Biscuit' per month at cost of Rs. 12.50 per packet. Vinod Sharma, the Production Manager could achieve the target in given time but at a cost of Rs. 12.75 per packet. Do you think the Production Manager is efficient? Give reason in support of your answer.
4. Management activities are performed in all types of organizations in all departments and at all levels. Which management character is highlighted here?
5. In the absence of management, the productive resources will remain resources and shall never become production." Explain the importance of management in the light of the above statement with the help of any four points.
 - (i.)
 - (ii.)
 - (iii.)
 - (iv.)
6. Match the following:-

(a.) Managing Director	(i.) Middle Level Management
(b.) Sales Manager	(ii.) Lower Level Management
(c.) C. E. O.	(iii.) Top Level Management
(d.) Plant Superintendent	(iv.) Middle Level Management
(e.) Supervisor	(v.) Lower Level Management
(f.) Foreman	(vi.) Top Level Management

7. Mark the levels of Management in the above diagram and give two designations each of the respective levels.



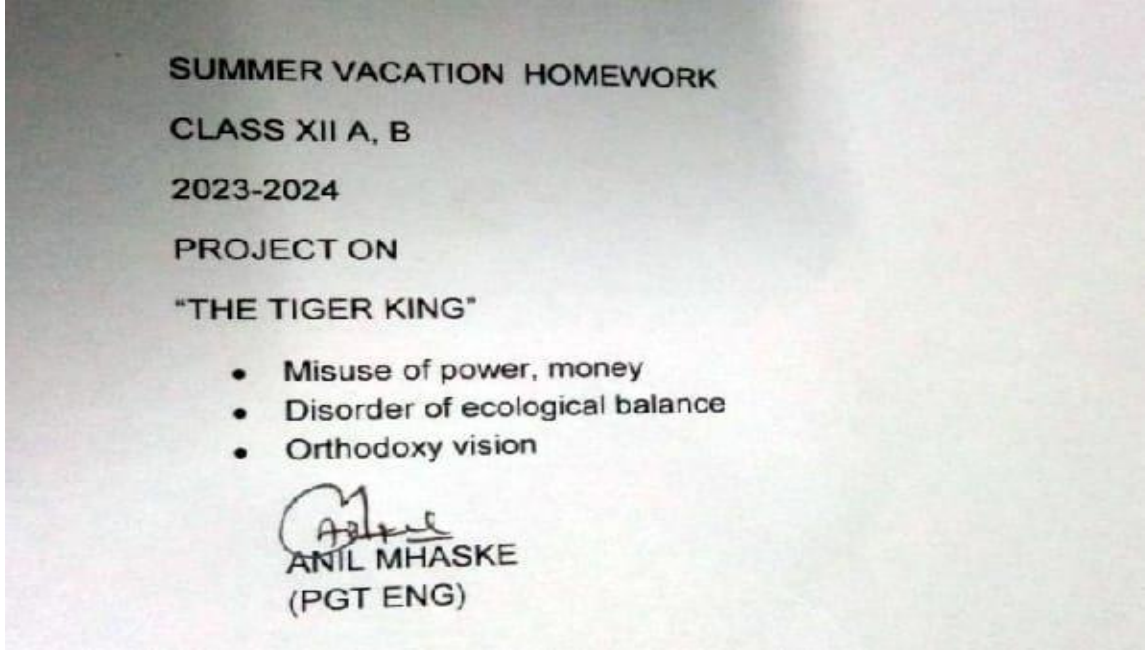
8. Prepare a project based on a) principle of management b) business environment c) stock market
d) marketing management

Apalini

Ridwan

Language for Both Streams

Subject: English



Subject: Hindi

