Semester: 4
Subject Code: 06193257
Subject Name: CDC [Maths -English]

Date: 04/04/2022
Time: 10:30 am to 01:00 pm
Total Marks: 60

## Instructions

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

## Q. 1 Do as Directed.

A). Read the following passage and answer question no. 1 to 5. (One Mark Each)

Many great inventions are initially greeted with ridicule and disbelief. The invention of the airplane was no exception. Although many people who heard about the first powered flight on December 17, 1903 were excited and impressed, others reacted with peals of laughter. The idea of flying an aircraft was repulsive to some people. Such people called Wilbur and Orville Wright, the inventors of the first flying machine, impulsive fools. Negative reactions, however, did not stop the Wrights. Impelled by their desire to succeed, they continued their experiments in aviation.

Orville and Wilbur Wright had always had a compelling interest in aeronautics and mechanics. As young boys they earned money by making and selling kites and mechanical toys. Later, they designed a newspaper-folding machine, built a printing press, and operated a bicycle repair shop. In 1896, when they read about the death of Otto Lilienthal, the brothers' interest in flight grew into a compulsion.

Lilienthal, a pioneer in hang-gliding, had controlled his gliders by shifting his body in the desired direction. This idea was repellent to the Wright brothers, however, and they searched for more efficient methods to control the balance of airborne vehicles. In 1900 and 1901, the Wrights tested numerous gliders and developed control techniques. The brothers' inability to obtain enough lift power for the gliders almost led them to abandon their efforts.

After further study, the Wright brothers concluded that the published tables of air pressure on curved surfaces must be wrong. They set up a wind tunnel and began a series of experiments with model wings. Because of their efforts, the old tables were repealed in time and replaced by the first reliable figures for air pressure on curved surfaces. This work, in turn, made it possible for the brothers to design a machine that would fly. In 1903 the Wrights built their first airplane, which cost less than $\$ 1,000$. They even designed and built their own source of propulsion-a lightweight gasoline engine. When they started the engine on December 17, the airplane pulsated wildly before taking off. The plane managed to stay aloft for 12 seconds, however, and it flew 120 feet.

By 1905, the Wrights had perfected the first airplane that could turn, circle, and remain airborne for half an hour at a time. Others had flown in balloons and hang gliders, but the Wright brothers were the first to build a full-size machine that could fly under its own power. As the contributors of one of the most outstanding engineering achievements in history, the Wright brothers are accurately called the fathers of aviation.

1. The idea of flying an aircraft was $\qquad$ to some people.
a) boring
c) exciting
b) distasteful
d) needless
2. People thought that the Wright brothers had $\qquad$ -
a) acted without thinking
c) been too cautious
b) been negatively influenced
d) been mistaken
3. The Wrights' interest in flight grew into a $\qquad$ .
a) financial empire
c) need to act
b) plan
d) foolish thought
4. Lilienthal's idea about controlling airborne vehicles was $\qquad$ the Wrights.
a) proven wrong by
c) disliked by
b) opposite to the ideas of
d) accepted by
5. The old tables were $\qquad$ and replaced by the first reliable figures for air pressure on curved surfaces.
a) destroyed
c) multiplied
b) invalidated
d) approved

## B).Define the following. (Each of 1 mark)

1. Give the definition of Complementary angles
2. Define Transversal of a line
3. Equilateral triangle
4. Chord of a circle
5. Supplementary angles

## C).Direct questions. (Each of 1 mark)

1. What is the formula to find the volume of a sphere
2. Find the simple interest on Rs. 8000 at $10 \%$ per annum for 3 years
3. Which is the next number in the G.P. $4,8,16,32,64$
4. What is the formula to find volume of a cuboid
5. What is the next number in A.P. $4,11,18,25,32 \ldots$
Q. 2 Answer the following questions. (Ques: 1 to 3 carry 2 marks and the last question carries 1
A) 1. Find the compound interest on Rs. 10,000 for 2 years at $4 \%$ rate of interest, interest being compounded half-yearly
a) Rs. 824.32
b) Rs. 842.32
c) 123.24
d) 824.24
6. Solve the following: $5(y-1)=3(2 y-5)-(1-3 y)$
a) $\frac{4}{11}$
b) $\frac{11}{4}$
c) $\frac{5}{11}$
d) $\frac{11}{5}$
7. What is the $108^{\text {th }}$ term of an A.P. $8,16,24,32 \ldots \ldots$ ?
a) 846
b) 856
c) 866
d) 864
8. write the total number of factors of 120
a) 12
b) 14
c) 16
d) 18
B).

## Direct Questions. (Each question carries two marks)

1. Find the total number of terms of an A.P. 3, 12, 21, 30, 39 843
a) 102
b) 103
c) 105
d) 106
2. Find the simple interest on Rs. 5000 for 2 years at $10 \%$ per annum simple interest
a) Rs. 1000
b) Rs. 500
c) Rs. 1500
d) None
3. Find the largest 3 -digit number which when divided by 6,9 and 12 leaves the remainder 3 in each case
a) 989
b) 976
c) 975
d) 965
4. Find the Compound interst on Rs. 10,000 for 2 years at $10 \%$ per annum interest:
a) Rs. 12100
b)Rs. 11000
c) Rs. 12300
d) None

## Q. 3 Answer the following questions. (Each of One Mark)

A). 1. Arrange the following statements in a logical order.

P: He began using rabbits for the trials.
Q : His experiments on rats were not successful.
R: The rabbits didn't help the study anyhow.
S: The doctor was very upset.
2. In the following sentence, one part of the sentence may have an error. Find out which part of the sentence has an error and select that as your answer. If the sentence is free from error, select 'No Error' option.

Everyone knows / that the leopard is / faster of all animals.
(a) Everyone knows
(b) that the leopard is
(c) Faster of all animals.
(d) No Error
3. Find out amongst the four alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.

4. Microphone: Loud: Microscope:?
(a) Elongate
(b) Examine
(c) Magnify
(d) Investigate
5. In the following sentence, one part of the sentence may have an error. Find out which part of the sentence has an error and select that as your answer. If the sentence is free from error, select 'No Error' option.

The manager along with his team / are working very hard / for the forth coming projects.
(a) The manager along with his team
(b) are working very hard
(c) For the forth coming projects.
(d) No Error
6. Safe: Secure: Protect:?
(a) Sure
(b) Guard
(c) Lock
(d) Conserve
7. What are the major objectives for conducting interview of a candidate seeking job? Explain briefly.

## B). Answer the following questions. (Each of One Mark)

1. Choose the correct water - image of the fig. (x) From the given four figures.

(a)

(b)

(c)

(d)
2. Find out amongst the four alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.


3. In a certain code language,
'134' means 'good and tasty';
'478' means 'see good pictures' and
'729' means 'pictures are faint'.
Which of the following digits stands for 'see'?
(a) 9
(b) 8
(c) 1
(d) 2
4. From the given alternatives select the word which cannot be formed using the letters of the given word.
CARPENTER.
(a) NECTAR
(b) CARPET
(c) PAINTER
(d) REPENT
5. Arrange the following words as per order in the dictionary 1. Forecast 2. Forget 3. Foreign 4. Forsook 5. Force.
(a) $3,5,1,2,4$
(b) $5,1,3,2,4$
(c) $5,1,3,4,2$
(d) $5,1,2,3,4$
6. Which among the following illustrations specifies the correct mirror image of PROCRASTINATE?
(a) ETANITSARCORP
(b) ЭТАИІТЕАЯJORQ
(c) RPORCASTNITAE
(d) ETPROCRASTINA
7. Who emerges as a leader in group discussion? Explain briefly.
8. During group discussion, speaking first is a high-risk, high-return strategy. Hence, speak first only if there is something sensible and substantial to say. State whether the statement is true or false.
Q. 4 Attempt any two questions. (Each of 7.5 )
9. (A) Find the total number of terms in A.P. $3,9,15,21, \ldots \ldots . ., 663$ Also write the formula to find the nth term of an A.P.( 3 marks) 111
(B)The measure of one supplementary angle is twice the measure of the second. What is the Measure of each angle? (3 marks)60 degree
(C)3. What is the least number of squares tiles required to pave the floor of a room 15 m 17 cm long and 9 m 2 cm broad? ( 1.5 marks)
a) 812
b) 814
c) 813
d) 815
10. (A) A hall is 15 m long and 12 m broad. If the sum of the areas of the floor and the ceiling is equal to the sum of the areas of four walls, the volume of the hall is.... ( 3 marks) 1200
(B) What is the unit digit in $\left\{(6374)^{1793} \times(625)^{317} \times\left(341^{491}\right)\right\}$ ? 0
(C) The percentage increase in the area of a rectangle, if each of its sides is increased by $20 \%$
is ( 1.5 marks)
a) $40 \%$
b) $42 \%$
c) $44 \%$
d) $46 \%$
11. (A) A grocer has a sale of Rs. 6435, Rs. 6927 , Rs. 6855 , Rs. 7230 and Rs. 6562 for 5 consecutive months. How much sale must he have in the sixth month so that he gets an average sale of Rs. 6500? (3 marks) 4991
(B) A large cube is formed from the material obtained by melting three smaller cubes of 3,4 and 5 cm side. What is the ratio of the total surface areas of the smaller cubes and the large cube?(3 marks)25:18
(C) A sum fetched a total simple interest of Rs. 4016.25 at the rate of 9 p.c.p.a. in 5 years. What is the sum?
a) Rs. 8925
b) Rs. 7867
c) Rs. 8899
d) Rs. 8765
12. (A) Six bells commence tolling together and toll at intervals of $2,4,6,810$ and 12 seconds respectively. In 30 minutes, how many times do they toll together? ( 3 marks) 16
(B) An error $2 \%$ in excess is made while measuring the side of a square. The percentage of error in the calculated area of the square is:( 3 marks) $4.01 \%$
(C)An angle is equal to one-third of its supplement. Its measure is equal to what
a) 45-degree
b) 35-degree
c) 50-degree
d) 55 degree
