யா/ஹாட்லிக் கல்லூரி,பருத்தித்துறை.

J/ Hartley College, Point Pedro.

முதலாம் தவணைப் பரீட்சை – 2019 – தரம் 11

First Term Examination – 2019 – Grade 11

கணிதம் I **Mathematics I**	**32**	**T**	**I**	இரண்டு மணித்தியாலம் **Two Hours**

சுட்டெண்
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Mathematics I

Answer all the questions on this paper itself.

Two marks for each question in Part – I (A)

Ten marks will be given to each question in Part – I (B)

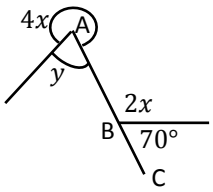
Part – I (A)

1. 1080 man days are needed to construct three houses in a housing scheme. How many days are needed to construct a house for 30 men?

2. Simplify $\frac{1}{2x} - \frac{1}{2x-1}$

3. If $x^7 = 64 \times x^4 [x \neq 0]$. Find the value of x.

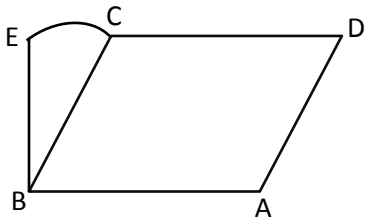
4. In the figure, ABC is a straight line. Find the value of y.



5. Make 'l' as the subject in the equation on $S_n = \frac{n}{2}[a - l]$

6. If $\lg(\frac{a^2}{10}) = b$ express lga in terms of b.

7. In the figure, ABCD is a rhombus.
   If $E\hat{B}C = 30^0$ and arc $EC = 2\pi cm$
   calculate the value of CD.



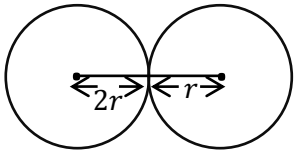
8. Describe the locus of midpoints of the parallel chord of a circle.

9. Find the solution of $4(n-7)^2 = 0$.

10. Find the value of $2[99^3 - 3 \times 99^2 + 3 \times 99 - 1$ by using $(a-b)^3 = a^2 - 3a^2b + 3ab^2 - b^2$

11. A, B are mutually exclusive events. If $P(A^{|}) = \frac{2}{9}$ and $P(B) = \frac{3}{4}$. find $P(A \cap B)$

12. Two circles are touching each other.
    If the total area of the region is 80π
    Find the value of r



13. If $6 - x > 2$ find the suitable two numbers for x when x is a positive integers.

14. A, B and C are three harbours B is situated east from C in $20Km$. A is situated $100°$ of bearing from C. represent this data in a diagram.

15. A rectangular paper area $720cm^2$ is used to cover the prism. If the length of the prism is $20cm$. Find the length of a side of the triangle.

16. If the mean and median of the distribution $12, 23, a, 67, 78$ is equal. Calculate the value of a

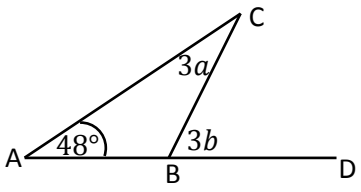
17. The given table denotes the income tax of a country.
If a person got 900000 as income. Find the tax that he has to be paid.

வருமானம்	வரி
முதல் 500 000	————
500 000	4%
500 000	8%

18. A pipe flows $50l$ of water in 50 seconds at a uniform rate calculate the rate at which water flows out of the pipe.

19. X and y are disjoint sets. If $X = \{2, 7\}$ and $X \cup Y = \{2, 4, 5, 7, 9\}$. Write the set Y.

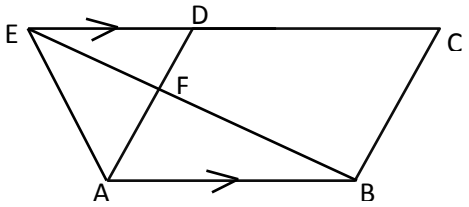
20. In the figure , ABC is a triangle and
ABD is a straight line,
calculate the value of $b - a$



21. A and B has respectively Rs.1750 and Rs.2250. How much money A has to get from B to both of them have equal amount of money?

22. Straight line $2x - y = k$ goes through the point (4, 2). Find intersection point of the line.

23. In the figure, ABCD is a parallelogram.
When $FE : BF + 1 : 2$.
Find the ratio of area of ΔAFE



24. Sum of exterior angles of a polygon is $\frac{1}{6}$ multiples of sum of interior angles of a polygon. Calculate the number of the polygon.

25.

Part – I (B)

Answer all the questions on this paper itself.

01. A man thought to give $\frac{2}{5}$ of his wealth to his school and half to a library and the remaining to general charity service.

a. Find the total part that he will give to school and library.

b. He $\frac{2}{3}$ of general charity service amount given to hospital as gift and giving the rest to the children now.

c.

02. A distance time graph of the motion of a bus from city O to A and their reach to city B by increasing the speed is given below.

a. How far is it from O to city B?

b. How long did it take from A to reach B?

c. Calculate the speed in Kmh^{-1} at which it travelled from A to B.

d. Draw a distance time graph for the travelling of car which it rate.

03.

a. Broker charge 18% as brokerage got RS. 7200 on the sale of a land. Calculate the selling price of the land.

b. Assessed value of a cultural hall is Rs. 80000

i. If the relevant provincial council institution charges 8% of the value of the hall as rates. How much has to be paid as rates for a quarter?

ii. After some years assessed value is changed and rate also increased as 12% and if rate for a quarter is increased by RS.260. Find the new assessed value of the hall.

04. The leaving of two buses A and B from a city are respectively 5 O'clock, 6 O'clock, 7 O'clock, 8 O'clock, 9 O'clock and 6 O'clock, 7 O'clock, 8 O'clock, 9 O'clock, 10 O'clock

i. Show the sample space as a set of ordered pairs on a grid and then represent it on given grid.

ii. Find the probability of the two buses leaving at the same time.

iii. Find the probability

a.

05. Particular students who got marks for a particular subject is given below.

23, 24, 37, 39, 39, 40, 43, 45, 48, 50, 52

i. Find the median of this distribution.

ii. Calculate the Q_1 and Q_3.

iii.

தண்டு	இலை
2	3, 4
3	7, 9
4	0, 3, 5
5	

iv. Complete the given stem and leaf diagram.

v. If a student who got 55 marks join with them and pass percentage is to be 25%. Find the lowest marks that a student can able to get.