A
COMMON HALF YEARLY EXAMINATION - 2022
Standard - VIII
MATHS

Time : 2.30 hrs

Part - I

Marks: 100

I. Answer all 14 questions. Choose the best answer:-   14×1=14

1) $\frac{-5}{4}$ is a rational number, which lies between _____
   a) 0 and $\frac{-5}{4}$ b) -1 and 0   c) -1 and -2   d) -4 and -5

2) 0.000000002020 in scientific form is _____
   a) $2.02×10^9$ b) $2.02×10^{-9}$ c) $2.02×10^{-8}$ d) $2.02×10^{-10}$

3) The longest chord of a circle is _____
   a) radius   b) diameter   c) circumference   d) arc

4) The cross section of a solid cylinder is _____
   a) circle   b) cone   c) straight line   d) frustum

5) The product of $7p^3$ and $(2p)^2$ is _____
   a) $14P^{12}$ b) $28P$ c) $9P^7$ d) $11P^{12}$

6) Divide x^3y^2 by x^2y.
   a) x^2y b) xy c) xy^2 d) x^2y^2.

7) Sum of a number and its half is 30 then the number is _____
   a) 15   b) 20   c) 25   d) 40

8) If 48% of 48=64% of x, then x= _____
   a) 64   b) 56   c) 42   d) 36

9) The time taken for Rs.4400 to become Rs.4851 at 10% compounded halfyearly is _____
   a) 6 months   b) 1 year   c) 1½ years   d) 2 years

10) If 5 persons can do 5 jobs in 5 days, then 50 persons can do 50 jobs in _____ days.
   a) 3   b) 7   c) 5   d) 6

11) The symbol is = used to represent _____ triangles
   a) similar   b) equal   c) congruent   d) unequal

12) The area of a rectangle of length 21cm and diagonal 29cm is _____
   a) 609cm²   b) 580cm²   c) 420cm²   d) 210cm²

13) How many outcomes can you get when you toss three coins once?
   a) 6   b) 8   c) 3   d) 3

14) Every 3rd number of the Fibonacci sequence is a multiple of _____
   a) 2   b) 3   c) 5   d) 8

Part - II

II. Answer any 10 questions. (Q.No.28 compulsory)   10×2=20

15) List any five rational numbers between $\frac{-1}{2}$ and $\frac{3}{5}$

16) Is 400 a perfect cube?

17) For the sectors with given measures find the length of the arc. Central angle 45°, r=16cm.

18) Verify Euler's formula: Face=12, Vertices =20, Edge=30

19) If the length and breath of a rectangular painting are $4xy^3$ and $3x^2y$. Find its area

20) Expand $(5p-1)^2$

21) Factorise $x^2+yz+xy+xz$

22) 48 is 32% of which number?

23) Write the formula to calculate discount.

24) Find the compound interest on Rs.3200 at 2.5% p.a for 2 years, compounded annually.

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25) Find the value of x,y in the following figure.

26) Check whether given sides are the sides of right angled triangles, using Pythagoras theorem 30, 40, 50

27) If you have 2 school bags and 3 water bottles then, in how many different ways can you choose each one of them, while going to school?

28) Using repeated subtraction method, find the HCF of 36 and 80.   [or]
Solve: $2x+5=9$

Part - III

III. Answer any 10 questions. (Q.No.42 compulsory) $10 \times 5 = 50$

29) Simplify: $\frac{1}{2} + \left(\frac{3}{2} - \frac{2}{5}\right) + \frac{3}{10} \times 3$
and show that it is a rational number between 11 and 12

30) Find x so that $(-7)^{x+2} \times (-7)^{6} = (-7)^{10}$

31) A circle of radius 70cm is divided into 5 equal sectors. Find the area of each of the sectors.

32) Find the area of the combined figure given, formed by joining a semicircle of diameter 6cm with a triangle of base 6cm and height 9cm. ($\pi=3.14$)

33) Find the volume of the cuboid whose dimensions are $(x+2)(x-1)$ and $(x-3)$

34) Factorise $49x^2 - 84xy + 36y^2$.

35) Find x : $-3(4x+9)=21$

36) If selling on article for Rs.820 causes 10% loss on the selling price, then find its cost price.

37) A and B together can do a piece of work in 16 days and A alone can do it in 48 days. How long will B take to complete the work.

38) A cement factory makes 7000 cement bags in 12 days with the help of 36 machines. How many bags can be made in 18 days using 24 machines?

39) In the given figure, D is the mid point of OE and $\angle CDE=90°$. Prove that $\triangle ODC \cong \triangle EDC$

40) A 20 feet ladder leans against a wall at height of 16 feet from the ground. How far is the base of the ladder from the wall?

41) Using repeated division method, find the HCF of 184, 230 and 276.

42) Find the perimeter and area of the given figure ($\pi=22/7$)
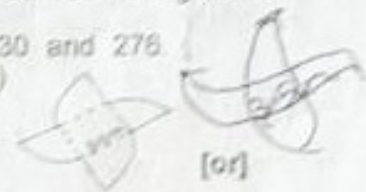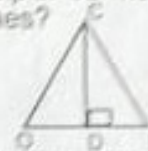
[or]

Find the difference between C.I and S.I on Rs.5000 for 1 year at 2% p.a. If the interest is compounded halfyearly.

Part - IV

IV. Answer the following 2 questions:- $2 \times 8 = 16$

43) Construct a trapezium BOAT in which $\overline{BO}$ is parallel to $\overline{TA}$. BO=7cm, OA=6cm, BA=10cm and TA=6cm. Also find its area.   [or]
Construct the following parallelogram with the given measurements and find its area. CAMP, CA=6cm, AP=8cm and CP=5.5cm.

44) Plot the following points in a graph sheet
A(5,2), B(-7,-3), C(-2,4), D(-1,-1), E(0,-5), F(2,0)   [or]
Draw the graph of y=5x.

$x^3 + (a+b+c)x^2 + (ab+bc+ca)x + (abc)$