SA-II 2/2015

SUBJECT : MATHEMATICS

CLASS : VIII

Time : 3 hrs. **M.M. : 80**

General Instructions :

(i) All questions are compulsory.

(ii) Read all questions very carefully.

(iii) Questions 1 to 10 carry 1 mark each.

(iv) Questions 11 to 18 carry 2 marks each.

(v) Questions 19 to 28 carry 3 marks each.

(vi) Questions 29 to 34 carry 4 marks each.

Q1. Find the common factor of $5xyz^2$ and $-10x^2y$.

Q2. State whether the distance covered by car and consumption of petrol vary directly or inversely.

Q3. Express 6×10^{-5} in usual form.

Q4. Find the value of A and B in

$$\begin{array}{r} 6\ \ A \\ +\ B\ \ 9 \\ \hline 8\ \ 5 \end{array}$$

Q5. On which axis will the point lie whose y co-ordinate is 3 and x co-ordinate is 0?

Q6. If the side of a cube is tripled, then how many times will its volume become?

Q7. Find the value of $2x(3x - 7) + 4$ for $x = 4$.

Q8. Out of 500 students in a school, 60% students read Hindi newspaper, 30% students read English newspaper and remaining students do not read any newspaper. Find the number of students who read Hindi newspaper.

Q9. Find the value of R in

$$\begin{array}{r} 6\ \ R \\ \times\ \ R \\ \hline 32\ \ R \end{array}$$

Q10. Express 0.00000632 in standard form.

Q11. Construct a rectangle ABCD given that AB = 5.3 cm and BC = 3.2 cm.

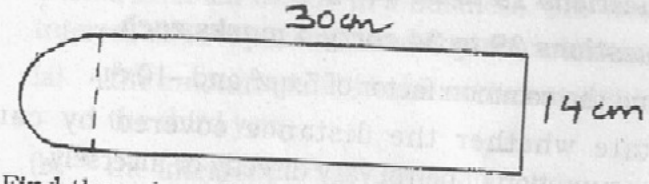
Q12. The area of a trapezium shaped field is $480m^2$, the distance between two parallel sides is 15m and one of the parallel side is 20m. Find the other parallel side.

Q13. Find and correct the error in

$$(4x + 5)^2 = 4x^2 + 20x + 25$$

Q14. Using $(x + a)(x + b) = x^2 + (a + b)x + ab$, find 102×97.

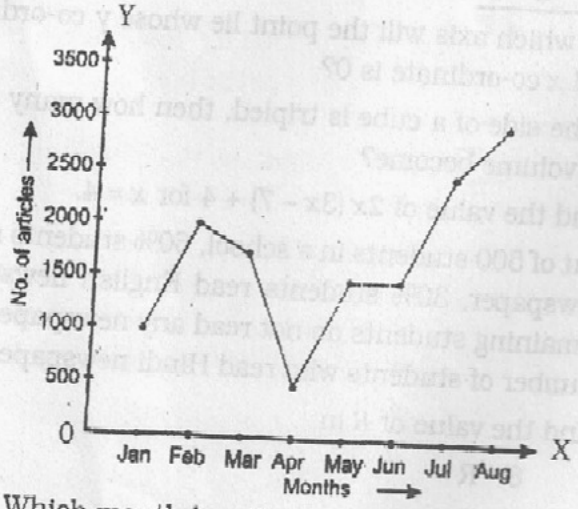
Q15. Find the perimeter of the figure:



Q16. Find the value of x such that

$$\left(\frac{2}{7}\right)^{2x} \div \left(\frac{2}{7}\right)^{3} = \left(\frac{2}{7}\right)^{-3}$$

Q17. The following graph shows the production of an article in various months:



(a) Which month has the maximum production?

(b) In which month 1750 articles were produced?

(c) What is the production in the month of February?

(d) In which two months same number of articles were produced?

Q18. Simplify and write the answer in positive exponent:

$$(-4)^{-3} \times (5)^{-3} \times (-5)^{-3}$$

Q19. Cost of 3 books is ₹24. What is the cost of 3 dozen books?

Q20. Simplify: $\dfrac{5^3 \times 3^4 \times 2^2}{27 \times 25}$

Q21. Construct a quadrilateral ABCD given that BC = 4.5cm, AB = 3.5cm, CD = 3cm, $\angle B = 90°$ and $\angle C = 120°$.

Q22. A cuboidal vessel of dimensions 12m × 6m × 3m is full of milk. Another cylindrical vessel of diameter 1.4m and length 100m is also full of milk. Which container has greater capacity?

Q23. Subtract the sum of $2x + 3y - 5xy$ and $3x - 2y + 2xy$ from the sum of $x - 2xy$ and $12x + 6xy - 3y$.

Q24. Sanjay wants to purchase a laptop whose marked price is ₹35,100 excluding 8% VAT. Find the price paid by Sanjay for the laptop.

Q25. Factorise: $a^4 - 16b^4$

Q26. In a hostel, there is enough food for 150 boys which lasts for 12 days. If 30 more boys join the hostel, the food would last for how many days?

Q27. Replace x by the possible digits so that the number $x653$ is divisible by 3.

Q28. Factorise and then solve $\dfrac{2x^2 - 12x + 18}{x - 3}$.

Q29. Construct a rhombus whose diagonals are 7cm and 5cm. Write steps of construction.

Q30. A shopkeeper purchased 200 bulbs for ₹10 each. However 5 bulbs were fused and had to be thrown away. The remaining were sold at ₹12 each. Find the gain or loss percent.

Q31. Simplify using identity:

(a) 96×104

(b) $(x^2 - xy^2)^2 + 2x^3y^2$

Q32. Draw a graph for distance-time from the table given below taking suitable scale:

Time (in hours)	8 am	9am	10am	11am	12noon
Distance (in km)	20	40	60	80	100

How much distance the car travelled during the period 9.30am to 10am?

Q33. Seema invested ₹5,000 in a business. She would be paid interest at 10% per annum compounded annually. Find

(a) the amount credited against her name at the end of the third year.

(b) the interest for the fourth year.

Q34. Pulkit painted four walls and roof of a rectangular room of size 10m × 12m × 10m. He got ₹10 per m^2 for his work. How much money he earned? He always give one fourth of his income to an orphanage. What value of Pulkit is being promoted here?