ATOMIC ENERGY EDUCATION SOCIETY
SUMMATIVE ASSESSMENT – 2 (2016-17)

Class: VII **Time: 2 ½ hours**
SUB: MATHEMATICS **Date: 15.03.2017** **Max. Marks: 90**

General Instructions:

This question paper is divided into four sections.
Section –A contains 10 questions each carrying 1 mark each.
Section – B contains 10 questions each carrying 2 marks.
Section – C contains 10 questions each carrying 3 marks each.
Section – D contains 6 questions each carrying 5 marks.

Section – A

(Questions numbers 1 to 10 carry 1 mark each.) **(10 x 1 = 10)**

1. **There are 200 voters, 50 of them voted yes. What percent voted yes?**
   (a) 10 % (b)) 25% (c)) 50% (d)) 60%

2. **The marks in a test decreased from 40 to 30. The percentage decrease is**
   (a) 10% (b) 25% (c) 100% (d) 1000%

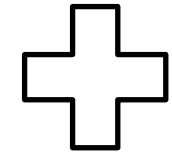
3. If $\frac{-3}{-5} = \frac{9}{x}$, then x = ?
   (a) 15 (b) – 15 (c) 9 (d) -9

4. **The area of a circle of diameter 2 r is**
   (a) Πr^2 (b) $2\Pi r^2$ (c) $2\Pi r$ (d) $4\Pi r^2$

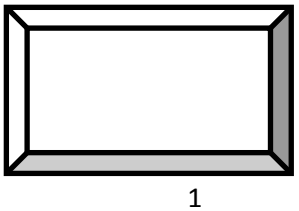
5. **What is the coefficient of y^2 in the expression $3a\,y^2 + 4x$?**
   (a) 3 (b) 7 (c) 3a (d) 4.

6. **The exponential form of 243 is**
   (a) 3^5 (b) 3^4 (c) 3^3 (d) 3^2.

7. **How many lines of symmetry are there in the adjacent figure?**
   (a) 2 (b) 4 (c) 6 (d) 1.



8. **The number of edges of the adjacent solid shape (cuboid) is :**
   (a) 6 (b) 12 (c) 18 (d) 4.



9. What cross – section do you get when you give a vertical cut to a die?

(a) Rectangle (b) Square (c) Triangle (d) Circle.

10. The rational number $\frac{12}{40}$ in standard form is:

(a) $\frac{6}{40}$ (b) $\frac{6}{10}$ (c) $\frac{3}{20}$ (d) $\frac{3}{10}$.

Section- B

(Question numbers 11 to 20 carry 2 marks each.) **(10 x 2 = 20)**

11. Divide 15 sweets between Manu and Sonu so that they get 20 % and 80% of them respectively.

12. Convert each part of the ratio 3:1 to percentage.

13. Find the value of: $-\frac{2}{13} \div \frac{1}{-7}$

14. The area of a parallelogram is 154.5 cm^2 and its height 20 cm. Find its corresponding base of the parallelogram.

15. Find the circumference (perimeter) of the semicircle whose radius is 21 cm.

16. Classify into monomial , binomials and trinomials:-

(a) 100 (b) 7mn (c) x + y – xy (d) $a^2 + b^2$

17. Find the value of $x^2 - 2x + 1$ when x = 2.

18. Which of the following is greater?

4^3 or 3^4

19. Write the order of rotation of symmetry for the following figures:-

(a) Square (b) Rhombus (c) Rectangle (d) Equilateral Triangle.

20. Examine if the following are true statements:

(a) The cube can cast a shadow in the shape of a rectangle.

(b) The cube can cast a shadow in the shape of a hexagon.

Section – C

(Questions numbers 21 to 30 carry 3 marks each). (10 x 3 = 30)

21. Rs. 7,000 is borrowed at 3.5 % rate of interest p. a. for 2 years. Find the amount to be paid at the end of the second year.

22. Find the standard form of (a) $\frac{-18}{45}$ and (b)$\frac{12}{18}$. (c) $\frac{-4}{-6}$

23. Construct a right – angled triangle whose hypotenuse is 6 cm long and one of the two other sides is 4 cm long.

24. How many times a wheel of radius 28 cm must rotate to go 352 m?

25. Simplify the expressions and find the value if x is equal to 2.

(a) 3(x+2) + 5x -7
(b) 4(2x – 1) + 3x +11

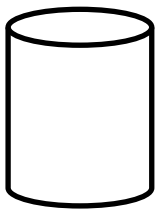
26. Simplify and express each of the following in exponential form:-

(a) $(3 \times 7^2 \times 11^8) \div (21 \times 11^3)$
(b) $\{(5^2)^3 \times 5^4 \} \div 5^7$

27. Draw the rough sketch of the following figures and draw their lines of symmetry :-

(a) regular pentagon (b) 5 – point star (c) a regular hexagon.

28. Draw the top, front and side view of the following figures:

(a) 

(b) 

29. Find the value of:

(a) $\frac{5}{63} - (\frac{-6}{21})$
(b) $\frac{3}{13} \div (\frac{-4}{65})$

30. Draw diagram of the net of square pyramid.

Section – D

(Question numbers 31 to 36 carry 5 marks each). **(6 x 5 = 30)**

31. (a) Subtract: ($5a^2 – 7ab + 5b^2$) from ($3ab – 2a^2 – 2b^2$)

(b) Add: (-7mn + 5) , (12mn + 2) , (9mn-8) , (- 2mn - 3)

32. Express each of the following as a product of prime factors only in exponential form (in simplest form) : -

(a) 108 x 192 (b) 729 x 64

33. Write the angle of rotation of symmetry for the following shapes:

(a) Square (b) Rectangle (c) Equilateral triangle
(d) Regular Hexagon (e) Regular Pentagon.

34. What cross –sections do you get when you give a vertical cut to the following solids?

(a) a brick (b) a round apple (c) A dice
(d) a circular pipe (e) a piece of chalk.

35. Express the following numbers in standard form (Scientific Notation):

(a) 5, 00, 00,000 (b) 70, 00,000 (c) 3,18,65,00,000
(d) 3, 90,878 (e) 52647.9810

36. A wire of length 22 cm was bent into the shape of a circle. The same wire is bent into the shape of a square. Which figure encloses more area?

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