

# Pavzi Media

## Polycet - 2016

## **English Medium**

Model Paper for Mathematics

- 1. 1 is a (an)
  - 1) Natural number but not a real number
  - 2) Integer and also an irrational number
  - 3) Rational number as well as a real number
  - 4) Real number but not a whole number
- 2. Among the following, neither a prime number nor a composite number is
  - 1) 0
  - 2) 2
  - 3) 3
  - 4) 1
- 3. Every integer is a (an)
  - 1) Natural number
  - 2) Whole number
  - 3) Irrational number
  - 4) Real number
- 4. The 4<sup>th</sup> power of 3 is

- 81
- 2) 9
- 3) 27
- 4) 243
- 5. A rational number in the following is
  - 1) 1
  - 2) e
  - 3) loq<sub>3</sub>2
  - 4) 22/7
- 6. A rational number that does not lie between 0 and 1 is
  - 1) 1/2
  - 2) 2/3
  - 3) 3/4
  - 4) 4/3
- 7. The decimal expansion of 0.225 in its rational form is
  - 1) 225
  - 2) 225/10<sup>4</sup>
  - 3)  $225/10^2$





4)	9/40	4)	Orange trees in the garden
9. Betwe	een any two natural numbers there exist infinitely	15. Set t	heory was proposed by
many		1)	Contor
1\	Natural numbers	<b>1)</b>	Cantor Boolae
1) 2)	Whole numbers	2)	
•		3)	Pythagoras Newton
3) <b>4)</b>	Integers Real numbers	4)	Newton
7)	Real Humbers		
10. The	number of prime factors of 72 is		
		16. Gene	erally set is defined by the following letter.
1)	12	1)	<b>V</b>
2)	2	2)	X
3)	3		q
4)	6	<b>3)</b> 4)	X
		4)	m
	many prime factors are there in the prime	\ <u>\</u>	
factoriza	ation of 240?	17. W –	(0)
1)	20	1)	N
2)	5	2)	C
2) <b>3)</b>	3	3)	R
4)	6	4)	Q
٦)			
12. 0.12	112111211112is		
		10 Tho	set formed from the letters of the word
1)	Irrational number	"SCHOO	
2)	Rational number	зспоо	L 15
3)	Composite number	1)	{S, C, H, O, O, L}
4)	Prime number		{S, C, H, L}
		3)	{S, C, H, O, L}
			None
13. A co	mposite number among the following	,	
1)	1	10 d l	
2)	2	<b>19</b> . Ø ±	
3)	3	1)	A
4)	4	2)	3
		3)	μ
		4)	Ø
14. Am	ong the following constitutes "well defined	,	
objects"	•		
-		20 Mavi	imum number of elements in a single ton set is
1)	Beautiful girls	ZU. IVIAN	initian number of elements in a single toll set is
2)	Good news papers	1)	0
3)	Tall boys	2)	8



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3)

4) 4

2) (m, 0)

3) (m, m) 4) (0, 0)

21. If I and m are two straight lines such that  $I \cap m = \emptyset$ , then I and m are ...... lines.

- 1) Parallel
- 2) Perpendicular
- 3) Intersecting
- 4) Same

22. Identify monomial.

- 1)  $x^2 2$
- 2) x + 2
- 3) 2x
- 4) None

23. Maximum number of terms in binomial is

- 1)
- 2) 3
- 3)
- 4) 2

24. 4x + 2 is a

- 1) Linear polynomial
- 2) Quadratic polynomial
- 3) Cubic polynomial
- 4) Biquadratic polynomial

25. A polynomial of degree three is called

- 1) A linear polynomial
- 2) A quadratic polynomial
- 3) A cubic polynomial
- 4) A biquadratic polynomial

26. The vertex of the parabola  $y = mx^2$  is

1) (0, m)

27. The graph of x = y<sup>2</sup> lies in the quadrants.....

- 1) Q<sub>1</sub>, Q<sub>2</sub>
- 2) Q<sub>1</sub>, Q<sub>3</sub>
- 3) Q<sub>2</sub>, Q<sub>4</sub>
- 4) Q<sub>1</sub>, Q<sub>4</sub>

28. When  $4x^2 - 8x + 3$  is divided by ....., the remainder is 24.

- 1) 2x + 1
- 2) 2x 1
- 3) 2x + 3
- 4) 2x 3

29. Condition of one root of  $ax^2 + bx + c = 0$  to be the reciprocal of the other is

- 1) b + c = 0
- 2) a c
- 3) a + c = b
- 4) a + b + c = 0

30. If p and q are unequal and  $x^2 + px + q$  and  $x^2 + qx + p$  have a common factor, then

- 1) p-q+1=0
- 2) p+q+1=0
- 3) p + q 1 = 0
- 4) p-q-1=0

31. Which of the following equations is not a linear equation?

- 1) 5 + 4x = y + 3
- 2) x + 2y = y x
- 3)  $3 x = y^2 + 4$
- 4) x + y = 0



- 3)
- 4) -3

32. Identify open sentence.

- 1) x + y = 7
- 2) 3x
- 3) x/12
- 4) None

33. If ax + b = 0 then x =

- 1) -a
- 2) a
- 3) b/a
- 4) -b/a

34. x = 2 and y = 1 is a solution to

- 1) 3x 2y = 4
- 2) 6x 4y = 7
- 3) x + y = 1
- 4) None

35. If a pair of linear equations in two variables is consistent, then the lines represented by two equations are

- 1) Intersecting
- 2) Parallel
- 3) Always coincident
- 4) Intersecting or coincident

36. If 29x + 41y = 169 and 41x + 29y = 181then x =

- 1) -3
- 2) 2
- 3) 3
- 4) -2

37. If x - y = 1 and 2x + y = 8 then y =

- 1) 2
- 2) -2

38. If  $5x^2 - kx + 11 = 0$  has a root x = 3, then k =

- 1) 16/3
- 2) 56/3
- 3) -17/3
- 4) 15

39. The roots of  $5x^2 - x + 1 = 0$  are

- 1) Real and equal
- 2) Real and unequal
- 3) Imaginary
- 4) None

40. If the equation  $x^2 - kx + 1 = 0$  has equal roots, then

- 1) k = 1
- 2) k = -1
- 3) k = 2
- 4) k = -4

41. The nature of the roots of quadratic equation  $3x^2 + x$ 

+ 8 = 0 is .....

- 1) Real and distinct
- 2) Real and equal
- 3) Imaginary
- 4) None

42. Sum of the roots of  $ax^2 + bx + c = 0$  is

- 1) c/a
- 2) b/a
- 3) a/b
- 4) None

43. Product of the roots of  $ax^2 + bx + c = 0$  is

1) c/a





- 2) -b/a
- 3) -c/a
- 4) None

44. The largest number which divides 77, 147 and 252 to leave the same remainder in each case is......

- 1) 25
- 2) 35
- 3) 9
- 4) 15

45. If K + 2, 4k - 6 and 3k - 2 are the consecutive term of an arithmetic progression, then K=

- 1) 3
- 2) 0
- 3) 2
- 4) 1

46. 51 + 52 + 53 + .....100 =

- 1) 1275
  - 2) 6325
  - 3) 5050
- 4) 3775

47. If a, b, c are in A.P. ..... are in G.P.

- 1)  $a^a, b^b, c^c$
- 2)  $a^c$ ,  $b^a$ ,  $c^b$
- 3)  $a^b$ ,  $b^c$ ,  $c^a$
- 4)  $a^{a}, a^{b}, a^{c}$

48. If the sum of the first 15 terms and the sum of the first 10 terms of an arithmetic progression are -15 and 5 respectively, the sum of the first 5 terms is

- 1) 20
- 2) -20
- 3) -10
- 4) 10

49. The general term of the series x – 5a, x – 2a, x + a, x + 4a..... is

- 1) x 8a
- 2) x + 3 (n 8/3) a
- 3) x + 3(n 1) a
- 4) x + 3na 2a

50. Pair of perpendicular lines among the following is :

- 1) 2x + 3y = 5; 3x 2y = 9
- 2) 2x + 3y = 5; -3x 2y = 9
- 3) 2x + 3y = 5; 2x + 3y = 9
- 4) 2x + 3y = 5; 3x + 2y = 9

51. The point R (4, 24) divides the line segment P (2, 27), Q(10, 15) in the ratio........

- 1) 4:1
- 2) 3:2
- 3) 2:3
- 4) 1:3

52. The slope of perpendicular to the line 5x - 3y + 4 = 0 is

- 1) 3/5
- 2) -3/5
- 3) -5/3
- 4) 5/3

53. The points A (- 4, - 1), B (- 2, - 4), C (4, 0) and D (2, 3) are the vertices of .........

- Parallelogram
- 2) Rectangle
- 3) Rhombus
- 4) Square

54. The area of the triangle whose vertices are (1, 3), (2, 4) and (5, 6)

1) -1/2



30   2   4   1/3		2)	1/2		
1) Obtuse 2) Reflex 3) Straight  55. Two vertices of vertices of a triangle are (-4, 6), (2, -2). If its centre of gravity (G) is (0,3) its third vertex is  1) (4, -6) 2) (-2, -2) 3) (-2, -5) 4) (2, -5)  56. Among the following the similar figures are 1) Squares 2) Circles 3) Equilateral triangles 4) All  62. Number of chords of a circle is  1) Point 2) Shape 3) Size 4) None  57. Two figures are said to be similar if they have same 1) Point 2) Shape 3) Size 4) None  63. Angle in a semicircle is  10 90° 2) 60° 3) 70° 4) None  59. Basic proportionality theorem is also known as			2	60. 36 <sup>0</sup> i	isangle.
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<ul> <li>3) 6:10</li> <li>4) 25:9</li> <li>64. Area of circle issq. units.</li> <li>1) πr</li> <li>2) πr²</li> <li>59. Basic proportionality theorem is also known astheorem.</li> <li>3) π+ r</li> <li>4) r/π</li> <li>65. If a parallelogram is cyclic, then it is</li> <li>4) None</li> <li>1) A rectangle</li> <li>2) A quadrilateral</li> </ul>					
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1) A rectangle 2) A quadrilateral				00. II a	paranetogram is ejelle, then it is
2) A quadrilateral		4)	None	1)	A rectangle
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3)	A rhombus	1)	2 times
4)	A square	2)	3 times
		3)	4 times
		4)	8 times
66. If a	trapezium is cyclic, then		
1)	Its parallel sides are equal	72 Tho	volume of a cone is 462 cm <sup>3</sup> , base radius is 7 cm,
2)	Its non-parallel sides are equal	then h =	
3)	Its diagonals are not equal	uicii ii -	-
4)	None of the above	1)	9 cm
		2)	8 cm
		3)	7 cm
		4)	6 cm
67. The	angles subtended by major arc at the centre is		
1)	< 90°		
2)	> 90°		
3)	< 180°		be of a metal of 5 cm edge is melted and casted
4)	> 180°		uboid whose base is 2.5 cm * 0.5 m, then height of
7)	7 100	the cub	DIQ IS
		1)	100 cm
		2)	10 cm
	e radii of a circle is doubled, then its area	3)	1000 cm
become	stimes.	4)	10000 cm
4)		\	
1)	2		
2)	3		
<b>3)</b> 4)	5		ne and a hemisphere have equal bases and equal
4)		volume	s. Then the ratio of their heights is
		1)	1:2
(0 lf +b	a wadii af taya ambawaa ia 2, 2 tham tha watia af	2)	3:1
	e radii of two spheres is 2 : 3, then the ratio of rface areas is	3)	1:3
men su	i i due di eas is	4)	2:1
1)	3:2		
2)	27 : 8		
3)	8:27	75. Sec	<b>(90 +</b> θ <b>)</b> =
4)	4:9		
		1)	-sec θ
	surface area of a sphere of radius 14cms in	2)	$\csc \theta$
sq.cms i	S	3)	$\sec \theta$
1)	1464	4)	-cosec θ
2)	<b>2464</b>		
3)	3464		
4)	4464	76. If A	B are acute angles such that sin A = cos B, A + b
',		=	
		1)	π/2
71. If th	e edge of a cube is doubled, then the new volume	2)	$\pi/4$
will be	•	2) 3)	$\pi$



3) π



Λ١	$\pi$	/~

- 77. The minutes hand of a clock is 3 cm long. How far does its tip move in 29 minutes?
  - 1) 9 cm
  - 2) 10 cm
  - 3) 22 cm
  - 4) 44/7 cm
- 78. Sin 110<sup>0</sup> =.....
  - 1) Sin 20<sup>0</sup>
  - <sup>2)</sup> Sin -20<sup>0</sup>
  - 3) Sin 70<sup>0</sup>
  - 4)  $\cos 70^{\circ}$
- 79. Cos 1º. Cos 2º. Cos 3º...... Cos 30º...... Cos 30º...... Cos 93º =
  - 1) 0
  - 2) 1
  - 3) √3
  - 4) 1/2
- 80. 1 radian =
  - 1) 56<sup>0</sup> 18'
  - 2) 57<sup>0</sup> 16′
  - 3) 56<sup>0</sup> 15'
  - 4)  $45^{\circ} 40'$
- 81. A ladder 19mts leaning to wall at 60°, with ground, the distance from foot to the wall is
  - 1) 18 m
  - 2) 19 m
  - 3) 9 m
  - 4) 9.5 m

- 82. A kite is flying in the sky with a thread of 68mts and making an angle  $0^0$ . If  $\tan \theta = 15/8$ , then find the height of the kite above the ground (mts)
  - 1) 50
  - 2) 60
  - 3) 70
  - 4) 80
- 83. The tops of two poles of heights 20 m and 14 m are connected by a wire. If the wire makes an angle of 30° with the horizontal, the length of the wire in metres in between two poles is
  - 1) 8
  - 2) 10
  - 3) 12
  - 4) 14
- 84. From the top of a minar of height 60 mts, the top and bottom of a clock tower are observed at the angles of depression of 30° and 60° respectively. Then the height of the clock tower in metres is
  - 1) 40
  - 2) 50
  - 3) 60
  - 4) 20
- 85. The angle of elevation of the top of the tower from a point 60 m from its foot is 30°. The height of the tower is
  - 1)  $30\sqrt{3}$  m
  - 2) 30 m
  - 3) 60 m
  - 4)  $20\sqrt{3}$  m
- 86. Two fair dice are rolled and the face values are added. The probability of getting an odd number greater than 8 is......
  - 1) 2/9
  - 2) 1/6
  - 3) 1/4



4)	1/9		
		92. Like	s Statistics =
87. If a c	coin is tossed 1000 times getting head 455 times	1)	9/40
	ting tail 545 times, then the probability of getting	2)	27/40
a head is		3)	
		4)	36/40
1)	0.455	,	
2)	0.545		
3)	1		
4)	0.5		number is selected from the four digit numbers
		*	n be formed from the digits 1, 2, 3, 4, 5, 6, 7. The
		probabi	ility that it is divisible by 5 is
88. The	probability of getting even number is	1)	4/7
000	probability or gotting over maniber is	2)	2/5
1)	150/1000	3)	7/16
2)	489/1000	4)	1/16
3)	190/1000	7)	",10
4)	200/1000		
,			
		94. Mod	de of the scores 7, 9, 11, 13, 15, 17, 19
		is	
	probability that a leap year contains 53 Sundays		
or 53 M	ondays is	1)	13.5
		2)	14
1)	4/7	3)	No mode
2)	1/7	4)	13
3)	3/7		
4)	2/7		
		05 If all	I the deviations of the scores in a data are taken
			e arithmetic mean, then the sum of deviations
90. A did	git is randomly taken from a logarithmic table.		
	e probability that the digit is 0 or 9 is	13	••••••
		1)	A.M.
1)	1/9	2)	∞
2)	1/10	3)	1
3)	1/5	4)	0
4)	2/5	•	
		0 / TI	
01 Top cords numbered 1 2 2			Mean and Mode of a uni modal data are 32 and
91. Ten cards numbered 1, 2, 3,10 are kept in		29 resp	ectively. Then the Median is
	a card is taken at random, then the probability	1\	20 F
ınat t <b>n</b> e	card drawn is a prime number is	1)	29.5
1)	2/5	2)	30
2)	1/5	3)	30.5
2) 3)	3/5	4)	31
3) 4)	3/5 4/5		
41			





- 97. The range of 20, 18, 37, 42, 3, 15, 15, 26 is
  - 1) 8
  - 2) 22
  - 3) 39
  - 4) 42
- 98. Find the mode when median is 125.6 and mean is 128.
  - 1) 120
  - 2) 120.8
  - 3) 125
  - 4) 128
- 99. The mean of 20 measurements was calculated to be 56 cm. But it was found that one of the measurements was recorded as 64 cm., instead of 61 cm. The correct mean will be (in cm.)
  - 1) 53
  - 2) 54.5
  - 3) 56.15
  - 4) 55.85
- 100. If between two numbers the A.M. is 25, the H.M. is 9 then the G.M. is
  - 1) 17
  - 2) 8
  - 3) 15
  - **4)** 225