**JNV**

**PERIODIC WRITTEN TEST : 1 SESSION 2019-20**

**MATHEMATICS**

**Class : X**

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| Roll No:X | Time: |
| Date : | MM :50 |

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| 1 | Decompose 32760 into prime factors. | 1 |
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| 2 | The graph of y = f(x) is given, how many zeroes are there of f(x)? C:\fake\image1.png | 1 |
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| 3 | Write whether the following pair of linear equations is consistent or not. x + y = 14, x – y = 4 | 1 |
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| 4 | In figure, DE || BC in ΔABC such that BC = 8 cm, AB = 6 cm and DA = 1.5 cm. Find DE.  C:\fake\image2.png | 1 |
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| 5 | Find the area of triangle formed by the points P(2, 1), Q(6, 1) and R(2, 4). | 1 |
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| 6 | Find HCF and LCM of 26676 and 337554 using fundamental theorem of arithmetic. | 2 |
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| 7 | For what value of k, is 3 a zero of the polynomial 2x2 + x + k ? | 2 |
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| 8 | For what value of p will the following pair of linear equations have infinitely many solutions? (p – 3)x + 3y = p; px + py = 12 | 2 |
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| 9 | Triangle ABC is right angled at B, and D is mid-point of BC. Prove that AC2 = 4AD2 – 3AB2. | 2 |
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| 10 | Find the ratio in which line formed by joining (–1, 1) and (5, 7) is divided by the line x + y = 4. | 2 |
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| 11 | The decimal expansion of the rational number C:\fake\image3.pngwill terminate after how many places of decimal. | 3 |
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| 12 | Find the zeroes of the quadratic polynomial 3x2 – 2 and verify the relationship between the zeroes and the coefficients. | 3 |
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| 13 | Solve the following pair of linear equations for x and y : 2(ax – by) + (a + 4b) = 0; 2(bx + ay) + (b – 4a) = 0 | 3 |
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| 14 | Two isosceles triangles have equal vertical angles and their areas are in the ratio 9 : 16. Find the ratio of their corresponding heights. | 3 |
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| 15 | Find the lengths of the medians of C:\fake\image4.pngABC having vertices at A(5, 1), B(1, 5) and C(– 3, – 1). | 3 |
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| 16 | Prove that 15 + 17C:\fake\image5.png be an irrational number. | 4 |
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| 17 | What must be subtracted or added to p(x) = 8x4 + 14x3 – 2x2 + 8x – 12 so that 4x2 + 3x – 2 is a factor of p(x)? | 4 |
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| 18 | Solve the following system of linear equations graphically: 3x + y – 12 = 0; x – 3y + 6 = 0 Shade the region bounded by the lines and x-axis. Also, find the area of shaded region. | 4 |
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| 19 | In figure AB || PQ || CD, AB = x units, CD = y units and PQ = z units, prove that C:\fake\image6.png  C:\fake\image7.png | 4 |
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| 20 | The vertices of a triangle ABC are A(1, k), B(4, –3) and C(–9, 7). Area of the triangle is 15 square units. Find the altitude of the triangle with AB as the base. (k is an integer) | 4 |
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