SSLC EXAM 2022

MATHEMATICS

Target 70+

Improve and Score > 90 %

PART – 1 : Important MCQs and 1 Mark Questions

By Arun S

"Success is achieved and maintained by those who try and keep trying"

- **Name of the Student:** _____
- **Name of School:** _____
- **Target :** _____

I. Answer the Following Questions:

1. If the nth term of an arithmetic progression is 3n+2, find its 5^{th} term

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2. The common difference of A.P. : 1, -1, -3, . . . is

3. In an Arithmetic progression an =5n+2, then 1st term is

4. Arithmetic progression with first term 3 and the common difference -2 is

5. The 17th term of an Arithmetic progression exceeds its 10th term by 7. Find common difference.

6. The sum of first ' n ' odd natural numbers is

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_____

7. If 2, x ,14 are in Arithmetic progression, then the value of 'x ' is

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8. The sum of first n positive integers is

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_____

9. The common difference in an Arithmetic progression 8 , 14 , 20 ..... Is

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10. The sum of first ' n ' even natural numbers is

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11. In an Arithmetic progression the sum of first four terms is 20 and the sum of first three terms is 12 then find the fourth term of the arithmetic progression.

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12. Write the formula to find the sum of the first 'n' terms of an arithmetic progression whose first term is 'a' and the last term is 'an'.

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13. If the sum of first n terms of an Arithmetic progression is $S_n = 2n^2 + n$, its common difference is

14. If 3, m, 11 are in Arithmetic progression, then find the value of 'm'.

15. In an arithmetic progression, first term is 'a' and the common difference is 'd', then its 15th term is

16. The common difference of the arithmetic progression 2,9,16,23. . . . .

17. In two similar triangles, if the ratio of the corresponding sides is 3 : 4, then the areas of these triangles are in the ratio

18. The ratio of the areas of two similar triangles is 16 : 9. The ratio of their corresponding sides is

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19. If the areas of two triangles are in the ratio of 36:64, then the ratios of their corresponding sides are

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_____

20. State Pythagoras Theorem

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21. State Basic proportionality Theorem

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22. Areas of two similar triangles are in the ratio 25 : 49. Sides of these triangles are in the ratio

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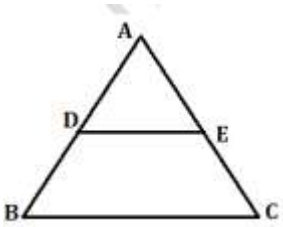
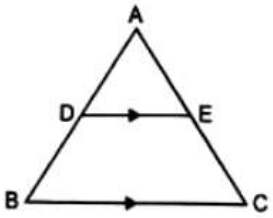
23. In the figure DE||BC, AB=8cm, AD=4cm and AE=3cm then the length of AC is



24. In the figure in ΔABC $DE \parallel BC$, $AD = 1\ cm$, $AE = 2\ cm$ and $EC = 6\ cm$ Find the length of DB



25. If two lines representing the pair of linear equations intersect each other, then the pair of equations is

26. In 3x + 2y = 12, if x = 0, then the value of y is

27. The ratio of coefficients of linear equations $a_1x+b_1y+c_1=0$ and $a_2x+b_2y+c_2=0$ which have infinite solution is

28. If two straight lines representing the pair of equations $3x + 2ky - 2 = 0$ and $2x + 5y + 1 = 0$ are parallel to each other than the value of 'k' is

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29. For what value of 'k' the given pair of linear equations are parallel :

$Kx + 3y = 5$; $4x + 6y = 13$

_____

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30. For what value of 'k' the given pair of linear equations have infinitely many solutions: $2x + 4y = 3$, $6x + Ky = 9$

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31. The ratio of coefficients of linear equations $a_1x+b_1y+c_1=0$ and $a_2x+b_2y+c_2=0$ which have no solution is

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_____

32. The ratio of coefficients of linear equations $a_1x+b_1y+c_1=0$ and $a_2x+b_2y+c_2=0$ which have unique solution is

_____

_____

33. For what value of 'k' the given pair of linear equations are parallel : 2x+3y=5 , 4x+ky=8

34. The linear equations 5x+10y=12 and 15x+30y=10 has

35. The linear equations 2x-3y=7 and 3x+2y=5 are

36. The linear equations 4x+3y=10 and 8x+6y=20 have

37. Pair of linear equations x + 2y = 6 and 3x + 6y = 18 have

38. For what value of 'k' the given pair of linear equations have infinitely many solutions : kx-4y=3 , 6x-12y=9

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_____

39. A pair of linear equations $a_1x+b_1y+c_1=0$, and $a_2x+b_2y+c_2=0$ is inconsistent then

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40. If the pair of Linear equations x + 2y = 3 and 2x + 4y = k are coincide then the value of 'k' is :

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41. 8 tables and 12 chairs together cost rupees 4800. Expressing the situation algebraically is

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_____

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42. The cost of 8 books and 5 pens is Rs 370. Represent this linear equation in two variables form

_____

_____

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43. If the pair of linear equations $x + 2y = 3$ and $2x + 4y = k$ are coincide then the value of 'k' is

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44. The solution of the pair of equations x – y = 2 and x + y = 4 is

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45. If the equations kx – 2y = 3 and 3x + y = 5 represents two intersecting lines at unique point, then find the value of k?

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46. If x = 2 and 2x + y = 12 then the value of y is

_____

_____

47. The lines represented by mx + 3y + 7 = 0 and 4x + 6y – 8 = 0 are parallel, then the value of 'm' is

_____

_____

_____

_____

48. The distance to a point P (x, y) from the origin is

_____

_____

49. The distance between the points A(X_1 , Y_1) & B(X_2 , Y_2) is

_____

_____

50 The mid-point of the line segment joining the points (X_1 , Y_1) & (X_2 , Y_2) is

_____

_____

51. The distance of the point (α, β) from origin is

_____

_____

52. Find the distance of the point P (3,4) from the origin

_____

_____

53. The relation between a and b when the points (1,2) , (0,0) and (a , b) are collinear

_____

_____

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_____

54. The distance of the point P(2, 7) from the x – axis is

_____

_____

55. The distance of the point Q(6, 4) from the Y – axis is

_____

56. The distance of the point (-7, 5) from y-axis

_____

_____

57. Co-ordinates of origin are.

_____

_____

58. The formula to find out the area of the triangle whose vertices are A (x_1, y_1), B(x_2, y_2) and C (x_3, y_3) is

_____

_____

59. The coordinates of the points which divides the line segment joining the points (x_1, y_1) and (x_2, y_2) internally in the ratio m1: m2 is

_____

_____

_____

60. The coordinates of the point on the x- axis will be in the form

_____

_____

61. The coordinates of the point on the y- axis will be in the form

_____

_____

62. The co-ordinates of the mid-point of the line segment joining the points (2,0) and (6,0) is

_____

_____

_____

63. The quadratic equation has degree

_____

64. The standard form of a quadratic equation is

_____

65. Formula to find the discriminant of the quadratic equation $ax^2 + bx + c = 0$ is

_____

_____

66. The values of X in given Quadratic equation $x^2 + 1 = 101$ are

_____

_____

67. The value for 'c' for which the equation $ax^2 + bx + c = 0$ has equal roots is

_____

_____

68. "The product of two consecutive positive integers is 30" this statement can be expressed as

_____

_____

69. If the value of the discriminant of a quadratic equation is zero then the nature of the roots are

_____

_____

70. If the value of the discriminant of a quadratic equation greater than zero then the nature of the roots are

_____

_____

71. If the value of the discriminant of a quadratic equation is less than zero then the nature of the roots are

_____

_____

72. If the roots of the quadratic equation $x^2 + mx + 4=0$ are equal, then the value of m is

_____

_____

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73. The sum of the squares of two consecutive odd numbers is 290. This statement is expressed in the form of an equation as

_____

_____

74. The standard form of the quadratic equation $2x^2 = 3x-7$ is

_____

_____

75. If One root of the quadratic equation $(x - 2)(x+1)=0$ is 2 then the other root is

_____

_____

76. The standard form of the equation $8x = -7x^2 + 3$ is

_____

_____

77. If one root of the quadratic equation $(x - 2)(x + 1) = 0$ is 2, then the other root is

_____

_____

78. If A $= 30^0$, then the value of sin 2A is

_____

_____

79. If 2 sin A $= 1$, then the value of angle A is

_____

_____

80. The value of $\tan 45^0$ is

_____

_____

81. $\sin(90-\theta)$ is equal to

_____

_____

82. $\tan\theta - \cot(90-\theta)$ is equal to

_____

_____

83. If $13\sin\theta = 12$ then $\operatorname{cosec}\theta =$

_____

_____

84. If $\tan A = 4/3$ then $\cot A =$

_____

_____

85. Simplify $\tan\theta.\cot\theta =$

_____

_____

86. Find the Value of Sin 90^0 + tan 45^0

_____

_____

87. If tanA = cotB , then A + B =

_____

_____

88. Evaluate : tan 45^0 + cot 45^0

_____

_____

89. Find the value of ($sin^2 25^0 + sin^2 65^0$).

_____

_____

90. If sin A = 1 / 2 where A is an acute angle then find the value of A.

_____

_____

91. If tan θ =1 then the value of ' θ ' is

_____

_____

92. The value $\frac{\sin 18}{\cos 72}$ of is

_____

_____

93. The value $\frac{\tan 26}{\cot 64}$ of is

_____

_____

94. The value of $Sin30^0 + cos60^0$ is

_____

_____

95. Find the value of $(1 + tan^2\theta)\ cos^2\theta$.

_____

_____

96. The value of Sin (90^0 - A)

_____

_____

97. if tan A = 4/3 then find the value of 4 cot A

_____

_____

98. Evaluate tan ($90 - \theta$) – cot θ

_____

_____

99. $1 + cot^2\ (90° - \theta)$ is equal to

_____

_____

100. The value of $\sin 60^0 \times \cos 30^0$ is

_____

_____

101. If $3\tan\theta = \sqrt{3}$ then θ =

_____

_____

102. The value of $\sin^2 45^0 \times \cos^2 45^0 =$

_____

_____

103. Volume of a cube of edge 3 cm is

_____

_____

_____

104. A cylinder and a cone are of same heights and same radii of their bases. If the volume of the cylinder is 300 cm^3 then, the volume of the cone is

_____

_____

_____

105. Surface area of a sphere of radius 7cm is

_____

_____

_____

106. The measure of central tendency that gives the middle most value of the data

_____

_____

107. The line segment joining two distinct points on a circle is

_____

_____

108. A straight line that intersects at only one point on the circle is

_____

_____

109. The maximum number of parallel tangents that can be drawn to a circle is

_____

_____

110. The maximum number of tangents that can be drawn to a circle from an external point is

_____

_____

111. If the angle between two tangents of a circle with is 70° then angle between their radii is

_____

_____

_____

112. The tangents drawn at the ends of a diameter of a circle are

_____

_____

113. In a given circle, the angle between the tangent and the radius at the point of contact is

_____

_____

114. The empirical relationship between the three measures of central tendency is

_____

_____

115. Class mark for the class 10 – 25 is

_____

_____

116. Size of the class interval 40-50 is

_____

_____

117. The middle most score in an orderly arranged data is

_____

_____

118. The sum of the values of all the observations divided by the total number of observations is

_____

_____

119. The Formula to find median of grouped data is

_____

_____

120. The formula used to find mode of the grouped data

_____

_____

121. If the median is 36 and mean is 18, then the value of the mode is

_____

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122. The x coordinate of the point of intersection of less than type ogive and more than type ogive gives the

_____

_____

123. The formula used to find the curved surface area of the frustrum of a cone whose radii are r1 and r2 and slant height 'l' is

_____

_____

124. The volume of a cylinder is 300m3 then the volume of a cone having the same radius and height as that of the cylinder is

_____

_____

_____

125. Volume of a sphere with radius 'r' is

_____

_____

126. A cylinder and a cone are of same base, radius and of same height. The ratio of the volume of the cylinder to that of the cone is

_____

_____

127. The surface area of a sphere of radius 7 cm is

_____

_____

_____

128. Formula to find volume of a cylinder is

_____

_____

129. A solid formed on revolving a side of a rectangle is

_____

_____

130. Formula to find total surface area of a hemisphere is

_____

_____

131. A solid formed on revolving a right-angled triangle about its height is

_____

_____

132. If the slant height of a frustum of a cone is 4cm and radii of its two circular ends are 5cm and 2cm, then its curved surface area is

_____

_____

_____

133. The length of each edge of a cube with its volume 64 cm^3 is

_____

_____

_____

134. Area of a quadrant of a circle with radius 'r' is

_____

_____

135. Write the formula to find the total length of an arc of a circle of radius 'r' units and subtends an angle θ at the centre.

_____

_____

136. The mean(average) of scores 4, 7, 9, x is 8. Find the value of x.

_____

_____

137. Write the formula used to find curved surface area of the frustum of a cone

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138. The formula to find length of an arc of a sector whose radius is 'r' and angle θ

_____

_____

139. Find the volume of a cone of height 10 cm and area of the base is 30 cm^2

_____

_____

140. The median of 6, 4, 3, 2, 8, 9, 5 is

_____

_____

141. Write the formula to find curved surface area of the sphere

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142. In the figure find the length of an arc AB of a circle centre 'O' if $\angle AOB = 90^0$

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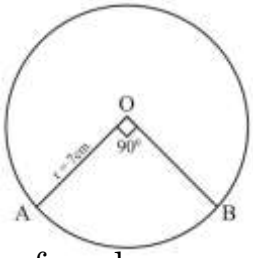

143. Write the formula to find the length of an arc of a sector of angle.

_____

_____

144. If two triangles are congruent, then the ratio of their areas

_____

_____

145. The formula used to find volume of sphere

_____

_____

146. If the surface area of a sphere is numerically equal to its volume, then r =

_____

_____

147. The Volume of the frustum of cone is given by

_____

_____

148. The volume of hemisphere of radius 'r' is

_____

_____

149. During conversion of a solid from one shape to another, the volume of the new shape will be

_____

150. The abscissa of the point of intersection of the less than type and of the more than type Ogive curves of the same grouped data gives its

_____

151. If 2 cos2A = 1 , then value of angle A is

_____

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152. The total surface area of a hemisphere with radius 7cm is

_____

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153. The volume of a cylinder is 300 m^3 then the volume of a cone having the same radius and height as that of the cylinder is

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154. The relationship between radius "r" and height "h" and slant height " l " of a cone

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155. The surface area of a sphere is 616 sq.m. The surface area of its hemisphere is

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156. The perimeter of the base of a right circular cylinder is 44 cm and its height is 10 cm. Then its lateral surface area is

_____

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157. The slant height of a cone having radius 5cm and height 12 cm is

_____

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158. If two solid hemispheres of same radius are joined together along their bases. The surface area of this new solid is

_____

_____

159. In $2x + y = 8$, if $y = 0$ then find the value of 'x'.

_____

_____

160. In a graph representing the pair of linear equations, if the lines intersect each other, then equations have

_____

_____

161. The median of the scores 5, 8,14,16,19 and 20 is

_____

_____

162. In the equation x + y = 5, if x = – 12, then the value of 'y' is

_____

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163. The factors of the quadratic equation $x^2 - 5x + 6 = 0$ are

_____

_____

164. The mode and mean of given data are 9 and 6 respectively, then the median is

_____

_____

165. The length of the biggest chord of a circle is 10 cm. The length of the radius is

_____

166. If the volume of a cube is 64 cm^3 then the length of its edges is

_____

_____

167. Angle between the radius and tangent at the point of intersect is

_____

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168. The circumference of a circle is $88cm$, then its radius is

_____

_____

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169. The mean and median of given data are 20 and 22 respectively, then the mode

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170. The radius of a sphere whose surface area is 616 cm^2

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