

## DEECET-2019

### MATHS – EM

1. Which of these is NOT a fundamental element of teaching?
  1. Student
  2. Teacher
  3. Subject
  4. Discipline
  
2. Which type of teaching is carried out within the family or in community during initial years of life?
  1. Formal
  2. Informal
  3. Non- formal
  4. Online
  
3. What was learnt in the class can be applied to daily life is called
  1. Application
  2. Knowledge
  3. Intelligence
  4. Originality
  
4. \_\_\_\_\_ student / students is/are unique
  1. All
  2. One
  3. Every
  4. None



5. Identify the odd one
1. Black-board
  2. Chalk piece
  3. Pencil
  4. Pen
6. This is not included in the Adisankaracharya Mutt
1. Puri
  2. Shringeri
  3. Varanasi
  4. Dwaraka
7. KUSUM (Kisan Urja Suraksha Evam Utthaan Mahabhiyan Scheme) as approved by the Union Cabinet in February 2019 is meant for the provision of this safety to the farmers
1. Economic and Water
  2. Political and Social
  3. Religious and Political
  4. Educational and Spiritual
8. Recently South Africa unveiled this telescope for providing information on the Milky Way and other galaxies.
1. Meerut
  2. Meerkat
  3. Meerbhum
  4. Habul



9. Select the correct answer with reference to the Parties founded by Dr. B.R. Ambedkar
- A) All India Scheduled Caste Federation
  - B) Independent Labour Party
  - C) Peasants and Workers Party of India
- 1. Both A and B
  - 2. C only
  - 3. Both A and C
  - 4. A only
10. A prominent musical tradition of the community in North West India
- 1. Panchayatan
  - 2. Kalaripattu
  - 3. Manganiyars
  - 4. Mohiniyattam
11. P.V. Sindhu is a great woman in the athletic arena of Asia.  
The word 'arena' in the above sentence indicates.
- 1. the outdoor
  - 2. the indoor
  - 3. the core
  - 4. the world
12. We dined yesterday at \_\_\_\_\_ Maurya Hotel.  
Choose the correct article that fits the blank.
- 1. a
  - 2. an
  - 3. the
  - 4. No article is needed.



13. Choose the coordinating conjunction from the following.

1. whether
2. when
3. yet
4. as long as

14. I closed the door. Somebody knocked again.

Choose the expression or conjunction that can be used to combine the two sentences above.

1. If ..... not
2. No sooner ..... than
3. so ..... that
4. and ..... therefore

15. The following is the characteristic of a one act play.

1. twist ending
2. focus on many incidents
3. more number of characters
4. many settings many locations



16. “స్వాతంత్ర్యపు జెండా” గేయ రచయిత

1. విశ్వనాథ సత్యనారాయణ
2. దేవులపల్లి వేంకటకృష్ణశాస్త్రి
3. రాయప్రోలు సుబ్బారావు
4. దువ్వూరి రామిరెడ్డి

17. “భృంగారము” అనే పదానికి వికృతి

1. భృగువు
2. బంభరము
3. బంగారము
4. బరువు

18. “అనలుడు” అనే పదానికి పర్యాయ పదాలు

1. సూర్యుడు, రవి
2. అగ్ని, వహ్ని
3. యముడు, వహ్ని
4. సింహం, మృగరాజు



19. “బుద్ధిహీనుడు” ఈ పదానికి సరైన విగ్రహ వాక్యం గుర్తించండి

1. బుద్ధి కొరకు హీనుడు
2. బుద్ధి యొక్క హీనుడు
3. బుద్ధి లోపల హీనుడు
4. బుద్ధి చేత హీనుడు

20. “పరుషాక్షరాలు” గుర్తించండి.

1. క, చ, ట, త, ప
2. గ, జ, డ, ద, బ
3. య, ర, శ, ల, వ
4. శ, ష, స, హ, క



21. The peacocks were very proud of their dances, but they admired the melodious songs of cuckoos.

Choose the correct statement from the following basing on the above sentence.

1. This sentence has two dependent clauses.
2. This sentence is a simple sentence.
3. This sentence is an example of a relative clause.
4. This sentence has two independent clauses.

22. Choose the word that can be used as a noun and a verb.

1. savage
2. scold
3. scrappy
4. broken

23. He was acting in a very \_\_\_\_\_ way.

Choose the word that fits the blank.

1. child
2. children
3. childish
4. childhood



24. Mounika solves her problems while they were in developing stage and saves his time and work.

The meaning of this sentence can be conveyed through the following proverb.

1. Failures are the stepping stones to success.
2. A stitch in time saves nine.
3. A friend in need is a friend indeed.
4. Honesty is the best policy.

25. A wonderful old Italian clock.

In the above expression the order of adjectives is :

1. opinion – number – origin – quality
2. origin – opinion – age – purpose
3. quantity – opinion – age – origin
4. opinion – age – origin – quantity

26. Choose the list of words which gives the similar meaning to 'break'.

1. split, breath, bowl, bow
2. cut, burst, crack, split
3. thick, wick, brick, mist
4. canal, cancel, candour, cane





27. My father made an earth-shaking decision over his expenditure on clothes.

The word 'earth-shaking' in the above sentence means.

1. tricky
2. dangerous
3. important
4. independent

28. Choose the word that cannot be collocated with the word 'heart-felt'.

1. sympathy
2. thanks
3. apology
4. exchange

29. Choose the linker that cannot be used to introduce a 'result'.

1. thus
2. hence
3. therefore
4. similarly

30. It's time she \_\_\_\_\_ her father.

Choose the correct form of verb that fits the blank.

1. meets
2. meet
3. met
4. has met



31. At what rate per annum will the principle becomes four times in 15 years
1. 25%
  2. 20%
  3. 15%
  4. 12.5%
32. The difference of  $1\frac{3}{16}$  and its reciprocal is equal to \_\_\_\_\_
1.  $\frac{304}{105}$
  2.  $\frac{152}{105}$
  3.  $\frac{135}{304}$
  4.  $\frac{105}{304}$
33. A verandah 2mt wide is constructed all around a room of dimensions 10 mt  $\times$  6 mt. Find the area of the verandah.
1. 80 sq mt
  2. 60 sq mt
  3. 140 sq mt
  4. 36 sq mt



34. In a class of 80 pupils the number of girls is three fifths of the number of boys. Find the number of boys in the class \_\_\_\_\_
1. 30
  2. 40
  3. 50
  4. 60
35. 8 pumps are required to fill a tank in  $1\frac{2}{3}$  hours. How many pumps of the same type are used to fill the tank in 20 min.
1. 16
  2. 40
  3. 32
  4. 44
36. If  $a + b + c = 9$  and  $ab + bc + ca = 26$  then  $a^2 + b^2 + c^2 =$  \_\_\_\_\_
1. 28
  2. 39
  3. 29
  4. 48
37. If  $\sec \theta + \tan \theta = p$  then what is the value of  $\sec \theta - \tan \theta =$  \_\_\_\_\_
1.  $\frac{1}{p}$
  2.  $\frac{2}{p}$
  3.  $-p$
  4.  $\frac{p^2 - 1}{p^2 + 1}$



38. The area of the quadrilateral formed by the points  $(1, 2)$ ,  $(2, -3)$ ,  $(-2, 4)$ ,  $(0, 5)$  is \_\_\_\_\_
1. 10 sq. units
  2. 15 sq. units
  3. 18 sq. units
  4. 20 sq. units
39. A box contains 5 red marbles, 8 white marbles and 4 green marbles. One marble is taken out of the box at random. What is the probability that the marble taken out will be not be green
1.  $\frac{4}{17}$
  2.  $\frac{13}{17}$
  3.  $\frac{13}{15}$
  4.  $\frac{3}{16}$
40. Find the length of the rectangle whose perimeter is 40 meters whose area 96 sq. meters (in meters)
1. 12
  2. 10
  3. 16
  4. 18



41. Which of the following is the most active metal
1. Lithium
  2. Sodium
  3. Potassium
  4. Rubidium
42. The temperature of a body is  $37^{\circ}$  C. Its temperature in Kelvin Scale is
1. 310 K
  2. -236 K
  3. 300 K
  4. 273 K
43. Which of the following is the correct electronic configuration of sodium
1. 2, 8
  2. 8, 2, 1
  3. 2, 1, 8
  4. 2, 8, 1
44. Rayon is made up of
1. Coal
  2. Oxygen
  3. Wool
  4. Cellulose



45. Any substance that turns directly into gaseous form from solid form or from solid form to gaseous form is termed
1. melting
  2. sublimation
  3. evaporation
  4. chromatography
46. The joints between the skull bones are
1. Hinge joints
  2. Pivotal joints
  3. Fixed joints
  4. Ball and socket joints
47. The plants that need long night for flowering are
1. Maize and Cotton
  2. Jowar and Soya
  3. Soya and Hibiscus
  4. Hibiscus and Wheat
48. Number of parts that the Stamen and the Pistil in Datura flower has
1. Stamen - 3, Pistil - 4
  2. Stamen - 4, Pistil - 2
  3. Stamen - 2, Pistil - 3
  4. Stamen - 5, Pistil - 1



49. ART centers are established
1. to treat renal failure patients
  2. to provide medical facilities for HIV patients
  3. to treat Rabies patients
  4. to provide medical facilities for arteries failure patients
50. One of the following is not the sites of taste sensation
1. Fungiform papillae
  2. Circumvallate papillae
  3. Foliate papillae
  4. Filiform papillae
51. Podu cultivation is widely adopted in the following states of India
1. Arunachal Pradesh and Chattisgarh
  2. Bihar and Madhya Pradesh
  3. Kerala and Odisha
  4. Haryana and Punjab
52. In Andhra Pradesh, pictures drawn by early men relating to human forms and ox were found in this village
1. Chinthalapudi (West Godavari District)
  2. Chillakallu (Krishna District)
  3. Chintakunta (YSR Kadapa District)
  4. Cheepurupalli (Vizianagaram District)



53. The Southwest monsoons at first enter into these districts in Andhra Pradesh
1. Nellore and Prakasam
  2. Chittoor and Kurnool
  3. Ananthapuram and Prakasam
  4. Srikakulam and Vizianagaram
54. The scholar who helped Akbar in the formulation of the idea of Sulh-i-Kul or universal peace
1. Abul Fazl
  2. Todarmul
  3. Bairam Khan
  4. Amir Khusroe
55. Indian National Congress declared 'Purna Swaraj' as its goal in the Lahore Session in 1929 under the Presidentship of
1. Mahatma Gandhi
  2. Jawaharlal Nehru
  3. Motilal Nehru
  4. Chittranjan Das
56. In 1919 Gandhiji gave a call for Satyagraha against
1. Minto Act
  2. Morley Act
  3. Rowlett Act
  4. Victoria Act





57. An important event relating to the Jute industry in India in 1859
1. First Jute mill was set up at Rishra near Kolkata
  2. First Jute mill was set up at Srirangam near Trichy
  3. First Jute mill was set up at Mumbai in Maharashtra
  4. First Jute mill was set up at Triplicane near Chennai
58. The following new political ideas were propagated during French Revolution
1. Women Empowerment and Separation of Powers
  2. Independence, Sovereignty and Secular
  3. Democracy, Decentralization and Dignity
  4. Liberty, Equality and Fraternity
59. The three states which were not invited to participate in the Versailles peace conference
1. Italy, Japan and France
  2. Austria, Germany and Turkey
  3. Britain, Soviet Union and America
  4. Japan, Indonesia and Italy
60. Fazl Ali, K.M. Panikkar and Hridayanath Kunzru were the members of the
1. States Reconstitution Commission
  2. States Reorientation Commission
  3. States Reorganization Commission
  4. States Reconstruction Commission



61. Domain of  $f(x) = \sqrt{[x] - x}$

1.  $\mathbb{R}$
2.  $\mathbb{Z}$
3.  $\mathbb{N}$
4.  $\mathbb{R} - \mathbb{Z}$

62. If  $f = \{(1, 2), (2, -3), (3, -1)\}$  then  $\sqrt{f}$

1.  $\{(1, \sqrt{2})\}$
2.  $\{(1, \sqrt{2}), (2, -\sqrt{3}), (3, -\sqrt{1})\}$
3.  $\{(1, \sqrt{2}), (2, \sqrt{3}), (3, \sqrt{1})\}$
4.  $\{(1, \sqrt{2}), (2, \pm\sqrt{3}), (3, \pm\sqrt{1})\}$

63. If  $A = \begin{bmatrix} i & 0 \\ 0 & i \end{bmatrix}$  then  $A^2 =$

1.  $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$
2.  $\begin{bmatrix} -1 & 0 \\ 0 & -1 \end{bmatrix}$
3.  $\begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix}$
4.  $\begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$



64. Inverse matrix of  $\begin{bmatrix} \cos \alpha & -\sin \alpha \\ \sin \alpha & \cos \alpha \end{bmatrix}$

1.  $\begin{bmatrix} \cos \alpha & -\sin \alpha \\ -\sin \alpha & \cos \alpha \end{bmatrix}$

2.  $\begin{bmatrix} \cos \alpha & -\sin \alpha \\ \sin \alpha & \cos \alpha \end{bmatrix}$

3.  $\begin{bmatrix} \cos \alpha & \sin \alpha \\ \sin \alpha & \cos \alpha \end{bmatrix}$

4.  $\begin{bmatrix} \cos \alpha & \sin \alpha \\ -\sin \alpha & \cos \alpha \end{bmatrix}$

65. If the vectors  $-3\bar{i} + 4\bar{j} + \lambda\bar{k}$ ,  $\mu\bar{i} + 8\bar{j} + 6\bar{k}$  are collinear vectors then  $\lambda + \mu =$  \_\_\_\_\_

1. -6

2. 3

3. -3

4. 9

66. For any vector  $\bar{a}$ , the value of  $|\bar{a} \times \bar{i}|^2 + |\bar{a} \times \bar{j}|^2 + |\bar{a} \times \bar{k}|^2 =$

1.  $4|\bar{a}|^2$

2.  $2|\bar{a}|^2$

3.  $|\bar{a}|^2$

4.  $3|\bar{a}|^2$



67.  $\frac{\cos 9^\circ + \sin 9^\circ}{\cos 9^\circ - \sin 9^\circ} = \underline{\hspace{2cm}}$

1.  $\cot 36^\circ$
2.  $\cot 54^\circ$
3.  $\cot 18^\circ$
4.  $\cot 72^\circ$

68. Period of  $\tan (x + 4x + 9x + \dots + n^2x)$

1.  $\frac{\pi}{n(n+1)(2n+1)}$
2.  $\frac{2\pi}{n(n+1)(2n+1)}$
3.  $\frac{6\pi}{n(n+1)(2n+1)}$
4.  $\frac{3\pi}{n(n+1)(2n+1)}$

69. The value of  $\sin^{-1}\left(\frac{1}{2}\right) + \cos^{-1}\left(\frac{1}{2}\right)$

1.  $\pi$
2.  $\frac{\pi}{2}$
3.  $\frac{\pi}{3}$
4.  $\frac{\pi}{4}$



70. The equation of locus of a point which is equidistant from the coordinate axes \_\_\_\_\_
1.  $x^2 - y^2 = 0$
  2.  $x + y = 0$
  3.  $x - y = 0$
  4.  $x^2 + y^2 = 0$
71. The point to which the origin is to be shifted so as to remove the first degree terms from the equation  $4x^2 + 9y^2 - 8x + 36y + 4 = 0$
1.  $(-1, 2)$
  2.  $(-1, -2)$
  3.  $(1, -2)$
  4.  $(1, 2)$
72. Normal form of a line  $x + y + 2 = 0$  is \_\_\_\_\_
1.  $x \cos \frac{5\pi}{4} + y \sin \frac{5\pi}{4} = \sqrt{2}$
  2.  $x \cos \frac{3\pi}{4} + y \sin \frac{3\pi}{4} = \sqrt{2}$
  3.  $x \cos \frac{\pi}{4} + y \sin \frac{\pi}{4} = \sqrt{2}$
  4.  $x \cos \frac{7\pi}{4} + y \sin \frac{7\pi}{4} = \sqrt{2}$



73. The angle between the lines  $2x + y + 4 = 0$ ,  $y - 3x = 7$  is \_\_\_\_\_

1.  $\frac{\pi}{2}$

2.  $\frac{\pi}{4}$

3.  $\frac{\pi}{3}$

4.  $\frac{\pi}{6}$

74.  $\frac{1}{r_1} + \frac{1}{r_2} + \frac{1}{r_3} =$  \_\_\_\_\_

1.  $\frac{1}{R}$

2.  $\frac{1}{s}$

3.  $\frac{1}{r}$

4.  $\frac{1}{\Delta}$



75. The acute angle between the pair of lines represented by  $x^2 + 2xy \cot \alpha - y^2 = 0$  is \_\_\_\_\_

1.  $\frac{\pi}{2}$

2.  $\frac{\pi}{4}$

3.  $\frac{\pi}{3}$

4.  $\frac{\pi}{6}$

76. The direction cosines of the line joining the points  $(-4, 1, 7)$  and  $(+2, -3, 2)$  is \_\_\_\_\_

1.  $\left( \frac{-6}{\sqrt{77}}, \frac{4}{\sqrt{77}}, \frac{+5}{\sqrt{77}} \right)$

2.  $\left( \frac{6}{\sqrt{77}}, \frac{4}{\sqrt{77}}, \frac{5}{\sqrt{77}} \right)$

3.  $\left( \frac{-6}{\sqrt{77}}, \frac{4}{\sqrt{77}}, \frac{-5}{\sqrt{77}} \right)$

4.  $\left( \frac{6}{\sqrt{77}}, \frac{-4}{\sqrt{77}}, \frac{-5}{\sqrt{77}} \right)$



77.  $\lim_{x \rightarrow 0} \frac{a^x - 1}{b^x - 1} = \underline{\hspace{2cm}}$

1.  $\frac{\log_e a}{\log_e b}$

2.  $\frac{\log_e b}{\log_e a}$

3.  $\log_e a + \log_e b$

4.  $\log_e a - \log_e b$

78.  $\lim_{x \rightarrow \infty} \frac{x^2 + 5x + 2}{2x^2 - 5x + 1}$

1. 0

2. 2

3.  $\frac{1}{2}$

4.  $\infty$

79. If  $f(x) = \sin(\log x)$ , ( $x > 0$ ), then  $f'(x) = \underline{\hspace{2cm}}$

1.  $\frac{1}{x} \cos(\log x)$

2.  $\frac{-1}{x} \cos(\log x)$

3.  $\frac{1}{x} \sin(\log x)$

4.  $\frac{-1}{x} \sin(\log x)$





80. The slope of the tangent of the curve  $y = 5x^2$  at  $(-1, 5)$  is

1.  $-5$
2.  $5$
3.  $10$
4.  $-10$

81. If  $Z_1 = -1$ ,  $Z_2 = i$  then  $\text{Arg}\left(\frac{Z_1}{Z_2}\right) = \underline{\hspace{2cm}}$

1.  $\frac{\pi}{3}$
2.  $\frac{\pi}{2}$
3.  $\frac{\pi}{4}$
4.  $\frac{\pi}{6}$

82. If  $\alpha, \beta$  are the roots of  $x^2 + x + 1 = 0$  then  $\alpha^4 + \beta^4 + \alpha^{-1}\beta^{-1} = \underline{\hspace{2cm}}$

1.  $0$
2.  $\omega$
3.  $-\omega$
4.  $\omega^2$



83. If  $\alpha, \beta$  are the roots of  $ax^2 + bx + c = 0$  then  $\frac{1}{\alpha} + \frac{1}{\beta} =$  \_\_\_\_\_

1.  $\frac{-c}{b}$

2.  $\frac{-b}{c}$

3.  $\frac{-c}{a}$

4.  $\frac{-b}{a}$

84. If the product of the roots of  $4x^3 + 16x^2 - 9x - a = 0$  is '9' then 'a' = \_\_\_\_\_

1. 36

2. -36

3. 9

4. -9

85. If  $(n+1)_{P_5} : n_{P_6} = 2:7$  then  $n =$  \_\_\_\_\_

1. -9

2. 9

3. -11

4. 11



86. If  ${}^{17}C_{2t+1} = {}^{17}C_{3t-5}$  then  $t =$  \_\_\_\_\_

1. 6
2. 2
3. 4
4. 3

87. The number of terms in the expansion of  $(2a + 3b + c)^7$

1. 28
2. 14
3. 7
4. 21

88. Resolve  $\frac{x^2 - 2x + 6}{(x-2)^3}$  in to partial fractions \_\_\_\_\_

1.  $\frac{1}{(x-2)} + \frac{2}{(x-2)^2} + \frac{6}{(x-2)^3}$
2.  $\frac{1}{(x-2)} + \frac{2}{(x-2)^3} - \frac{6}{(x-2)^3}$
3.  $\frac{1}{(x-2)^2} + \frac{2}{(x-2)^3} + \frac{6}{(x-2)}$
4.  $\frac{-1}{(x-2)} + \frac{2}{(x-2)^3} + \frac{6}{(x-2)^2}$



89. Median of the data 4, 6, 9, 3, 10, 13, 2
1. 2
  2. 4
  3. 13
  4. 6
90. If A, B are independent events with  $P(A) = 0.2$ ,  $P(B) = 0.5$  then  $P(A \cap B) =$  \_\_\_\_\_
1. 0.2
  2. 0.5
  3. 0.1
  4. 1
91. Equation of the circle whose ends of the diameter are (1, 2), (4, 6) is \_\_\_\_\_
1.  $x^2 + y^2 - 5x - 8y + 16 = 0$
  2.  $x^2 + y^2 - 5x + 8y + 16 = 0$
  3.  $x^2 + y^2 + 5x - 8y + 16 = 0$
  4.  $x^2 + y^2 + 5x + 8y + 16 = 0$
92. Equation of the common chord of the circles  $x^2 + y^2 - 4x - 4y + 3 = 0$ ,  $x^2 + y^2 - 5x - 6y + 4 = 0$  is \_\_\_\_\_
1.  $x + 2y - 1 = 0$
  2.  $x - 2y - 1 = 0$
  3.  $x - 2y + 1 = 0$
  4.  $x + 2y + 1 = 0$



93. Vertex of the parabola  $4y^2 + 12x - 20y + 67 = 0$

1.  $\left(\frac{7}{2}, \frac{-5}{2}\right)$

2.  $\left(\frac{-7}{2}, \frac{5}{2}\right)$

3.  $\left(\frac{-7}{2}, \frac{-5}{2}\right)$

4.  $\left(\frac{7}{2}, \frac{5}{2}\right)$

94. If  $4x + y + k = 0$  is a tangent to the ellipse  $x^2 + 3y^2 = 3$  then  $k = \underline{\hspace{2cm}}$

1. 7

2. 8

3. 9

4. 10

95. If  $3x - 4y + k = 0$  is a tangent to the hyperbola  $x^2 - 4y^2 = 5$  then  
 $k = \underline{\hspace{2cm}}$

1. 5

2. 7

3. 2

4. 3



96.  $\int e^{\log(1+\tan^2 x)} dx$

1.  $\sec x$
2.  $\tan x$
3.  $\sec^2 x$
4.  $\tan^2 x$

97.  $\int_0^2 |1-x| dx =$

1. 2
2. 1
3. 4
4. 3

98. Area under the curve  $f(x) = \sin x$  in  $[0, 2\pi]$

1. 1
2. 2
3. 3
4. 4

99. General solution of  $\frac{dy}{dx} = e^{x+y}$

1.  $e^x + e^{-y} = c$
2.  $e^x - e^{-y} = c$
3.  $e^{-x} + e^y = c$
4.  $e^{-x} - e^y = c$



100. Differential equation of  $y = A \cos 3x + B \sin 3x$   
(A, B are parameters)

1.  $\frac{d^2y}{dx^2} + 9y = 0$

2.  $\frac{d^2y}{dx^2} - 9y = 0$

3.  $\frac{d^2y}{dx^2} + 6y = 0$

4.  $\frac{d^2y}{dx^2} - 6y = 0$

