## MATHEMATICS

1. Three farmers have 490 kg, 588 kg and 882 kg of wheat respectively. Find the maximum capacity of a bag so that the wheat can be packed in exact number of bags.
   (a) 98 kg
   (b) 290 kg
   (c) 200 kg
   (d) 350 kg

2. HCF of 8, 9, 25 is
   (a) 8
   (b) 9
   (c) 25
   (d) 1

3. Express 196 as a product of its primes
   (A) $2^2 \times 7$
   (B) $2^2 \times 7^2$
   (C) 2×7^2
   (D) $2^3 \times 7$

4. If two positive integers A and B can be ex-pressed as $A = xy^3$ and $B = x^4 y^2 z$; x, y being prime numbers, the LCM (A, B) is
   (a) xy^2
   (b) $x^4 y^2 z$
   (c) $x^4 y^3$
   (d) $x^4 y^3 z$

5. The least number that is divisible by all the numbers from 1 to 5 (both inclusive) is
   (a) 5
   (b) 60
   (c) 20
   (d) 100

6. Which of the following is not irrational?
   (A) $(2 - \sqrt{3})2$
   (b) $(\sqrt{2} + \sqrt{3})2$
   (c) $(\sqrt{2} - \sqrt{3})(\sqrt{2} + \sqrt{3})$
   (d) $2\sqrt{7}/7$

7. The number '3.14' is
   (A) natural number
   (B) rational number
   (C) irrational number
   (D) rational or irrational

8. The polynomial equation x (x + 1) + 8 = (x + 2) {x − 2} is
   (a) linear equation
   (b) quadratic equation
   (c) cubic equation
   (d) bi-quadratic equation

9. The zeroes of the quadratic polynomial $x^2 + 20x + 200$ are
   (A) both positive
   (B) both negative
   (C) one positive and one negative
   (D) both equal
10. A quadratic polynomial, whose zeroes are -3 and -5, is
    (A) $x^2-8x + 15$
    (B) $x^2 + 8x + 15$
    (C) $x^2- 8x - 15$
    (D) $x^2 + 8x - 15$
11. If 1 is one of the zeroes of the polynomial $x^2 + x + k$, then the value of k is:
    (A) 2
    (B) -2
    (C) 4
    (D) -4
12. One equation of a pair of dependent linear equations is $2x + 5y = 3$. The second equation will be
    (a) $2x + 5y = 6$
    (b) $3x + 5y = 3$
    (c) $-10x – 25y + 15 = 0$
    (d) $10x + 25y = 15$
13. If a pair of linear equations is consistent, then the lines will be
    (A) always coincident
    (B) parallel
    (C) always intersecting
    (D) intersecting or coincident
14. The pair of equations $3x – 5y = 7$ and $– 6x + 10y = 7$ have
    (a) a unique solution
    (b) infinitely many solutions
    (c) no solution
    (d) two solutions
15. If $x = a$, $y = b$ is the solution of the equations $x + y = 5$ and $2x – 3y = 4$, then the values of a and b are respectively
    (A) 6, -1
    (B) 2, 3
    (C) 1, 4
    (D) 19/5, 6/5
16. The sum of the digits of a two-digit number is 9. If 27 is added to it, the digits of the number get reversed. The number is
    (A) 27
    (B) 72
    (C) 45
    (D) 36
17. The equation $2x^2 + kx + 3 = 0$ has two equal roots, then the value of k is
    (A) $\pm\sqrt{6}$
    (B) ± 4
    (C) $\pm3\sqrt{2}$
    (D) $\pm2\sqrt{6}$
18. The sum of the roots of the quadratic equation $3\times2 – 9x + 5 = 0$ is
   (A) 3
    (B) 6
    (C) -3
    (D) 2

19. If the roots of $px^2 + qx + 2 = 0$ are reciprocal of each other, then
    (A) P = 0
    (B) p = -2
    (C) p = ±2
    (D) p = 2
20. The sum of the squares of two consecutive natural numbers is 313. The numbers are
    (A) 12, 13
    (B) 13,14
    (C) 11,12
    (D) 14,15
21. Volume and surface area of a solid hemisphere are numerically equal. What is the diameter of hemisphere?
    (A) 6
    (B) 12
    (C) 3
    (D) 8
22. The total surface area of a hemispherical solid having radius 7 cm is
    (A) 462 cm²
    (B) 294 cm²
    (C) 588 cm²
    (D) 154 cm²
23. A solid formed on revolving a right angled triangle about its height is
    (A) cylinder
    (B) sphere
    (C) right circular cone
    (D) two cones
24. 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
    (A) 2 : 1
    (B) 3 : 1
    (C) 2 : 3
    (D) 3 : 2
25. The shadow of a tower is equal to its height at 10-45 a.m. The sun's altitude is
    (a) 30°
    (b) 45°
    (c) 60°
    (d) 90°
26. In figure given ABCD is a rectangle, the value of CE is
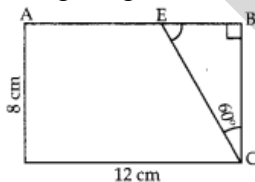
    (a) 1 cm
    (b) 2 cm
    (c) 3 cm
    (d) 4 cm
27. The area of the circle is 154 cm2. The radius of the circle is
    (A) 7 cm
    (B) 44 cm
    (C) 22 cm
    (D) 154 cm

28. If angle of sector is 60°, radius is 3.5 cm then length of the arc is
    (A) 3 cm
    (B) 3.5 cm
    (C) 3.66 cm
    (D) 3.8 cm
29. A horse is tied to a peg at one corner of a square shaped grass field of side 15 m by means of a 7 m long rope. The area of that part of the field in which the horse can graze, is
    (A) 77 cm²
    (B) 77/2 cm²
    (C) 154 cm²
    (D) 77/4 cm²
30. n given figure, the value of ∠C is
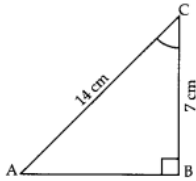
    (a) 90°
    (b) 45°
    (c) 30°
    (d) 60°
31. The probability of getting at least two head in tossing a pair of coins is
    (A) 0
    (B) 1
    (C) 1/3
    (D)1/2
32. The probability of getting a face card from a well shuffled deck of 52 cards is
    (A) 4/13
    (B) 1/2
    (C) 3/26
    (D) 1/6
33. Which of the following can be the probability of an event?
    (A) – 0.4
    (B) 1.004
    (C) 18/23
    (D) 107
34. A ticket is drawn at random from a bag containing tickets numbered from 1 to 40. The probability that the selected ticket has a number which is a multiple of 5 is
    (A) 3/5
    (B) 1/5
    (C) 1/3
    (D) 4/5
35. The chance of throwing 5 with an ordinary die is:
    (A) 1/6
    (B) 1/5
    (C) 1/2
    (D) 0
36. One of the methods for determining mode is
    (A) Mode = 2 Median -3 Mean
    (B) Mode = 3 Median – 2 Mean
    (C) Mode = 2 Mean – 3 Median
    (D) Mode = 3 Mean – 2 Median

37. For the following distribution

C.I.	0-10	10-20	20-30	30-40	40-50
f	20	30	24	40	18

the sum of lower limits of the modal class and the median class is
(A) 20
(B) 30
(C) 40
(D) 50

38. For the following distribution

Cl	0-5	5-10	10-15	15-20	20-25
f	10	15	12	20	9

the difference of the upper limit of the median class and the lower limit of the modal class is
(A) 0
(B) 5
(C) 10
(D) -5

39. The absccissa of the point of intersection of the less than type and of the more than type cumulative frequency curves of a grouped data gives its
(A) Mean
(B) Median
(C) Mode
(D) None of these

40. A tangent is drawn from a point at a distance of 17 cm of circle C(0, r) of radius 8 cm. The length of its tangent is
(A) 5 cm
(B) 9 cm
(C) 15 cm
(D) 23 cm

41. The product of a rational and irrational number is
(A) rational
(B) irrational
(C) both of above
(D) none of above

42. What is the number(s) of zeroes that a linear polynomial has/have:
(A) 0
(B) 1
(C) 2
(D) 3

43. What is degree of polynomial $p(x) = 2x^4 + x + 6 / x^2 + 5x + 7$:
(A) 0
(B) 1
(C) 2
(D) 3

44. For roots of quadratic equation are real and equal:
    (A) $D \leq 0$
    (B) $D \geq 0$
    (C) $D > 0$
    (D) $D = 0$
45. The product of zeroes of quadratic polynomial $p(x) = Ax^2 + Bx + C$, C # 0 has/have:
    (A) C/A
    (B) B/A
    (C) – B/A
    (D) – C/A
46. If HCF (16, y) = 8 and LCM (16, y) = 48, then the value of y is
    (a) 24
    (b) 16
    (c) 8
    (d) 48
47. On the y-axis value of x-coordinate is:
    (A) 0
    (B) y
    (C) x
    (D) (0,0)
48. The graph of y = -2 is a line parallel to the
    (A) x-axis
    (B) y-axis
    (C) both x- and y-axis
    (D) none of these
49. The distance of the point P(2, 3) from the y-axis is:
    (A) 2
    (B) 3
    (C) 1
    (D) 5
50. $\frac{1}{cosec^2 x} + \frac{1}{sec^2 x} = ?$
    (A) tanx
    (B) 0
    (C) 1
    (D) $sec^2 x.cosec^2 x$
51. Value of $Cot30^0$ is:
    (A) 1
    (B) $\sqrt{3}$
    (C) $1/\sqrt{3}$
    (D) $\sqrt{3}/2$
52. Curved surface area of hemisphere is:
    (A) $2\pi r^2$
    (B) $3\pi r^2$
    (C) $4\pi r^2$
    (D) $2\pi r^3$

53. Perimeter of Quadrant where radius is r:

(A) $\pi r + r$

(B) $\frac{1}{2}\pi r$

(C) $\pi r + r$

(D) $\frac{1}{2}\pi r + 2r$

54. Which is criteria of similarity of two triangles:

(A) RHS

(B) SAS

(C) All (A), (B), (D)

(D) SSS

55. Number of tangents can draw one point on the circle:

(A) 1

(B) infinite

(C) 2

(D) none

56. Class Mark of any interval is:

(A) upper limit + lower limit

(B) upper limit – lower limit

(C) highest data – lowest data

(D) $\frac{upper\ limit + lower\ limit}{2}$

57. TSA of right circular cylinder is:

(A) $\pi r (l+ 2r)$

(B) $2\pi r (h + r)$

(C) $2\pi r$ (h+ 2r)

(D) $\pi r l + 2\pi r$h

58. nth term of A.P. from ending is:

(A) l-(n-1)d

(B) l + nd - d

(C) l+ nd - 1

(D) l+(n-1)d

59. Common difference of A.P.: -1,3,7,11,….. is:

(A) 4

(B) -4

(C) 2

(D) -2

60. A minute hand clock make a angle in 10 minutes on the center is:

(A) 30^0

(B) 90^0

(C) 1080^0

(D) 60^0

ENGLISH

Answer the following questions by choosing the correct option.   (1x40=40)

Q61. The rainbow _____ long before his friends reached the terrace.
   a) vanishes
   b) will vanish
   c) had vanished
   d) had been vanished

Q62. He had to limp _____ his one foot on his way back because he was injured.
   a) off
   b) on
   c) in
   d) aside

Q63. He was so confused that he couldn't decide about it _____ way.
   a) any
   b) right
   c) left
   d) so

Q64. The players were so involved in the game _____ they lost track of time.
   a) while
   b) after
   c) during
   d) that

Q65. The fish that lived in deep seas were _____ than the rest of the fishes.
   a) poison
   b) most poisonous
   c) more poisonous
   d) poisoned

Q66. Choose the word with the correct spelling.
   a) Onematopoeia
   b) Onometapoeia
   c) Onomatopoeia
   d) Onomeotopoeia

Q67. Which of the following words means '**a cure for all ills**'?
   a) Epidemic
   b) Didactic
   c) Panacea
   d) Diction

Q68. Choose the correct term to fill the blank in the following sentence.
I never believe _____.
   a) a child's play
   b) a bosom friend
   c) a laughing stock
   d) a cock and bull story

Q69. Choose the correct **Indirect Speech** of the sentence given below.
   The man said to the beggar, "What do you want?"
   a) The man asked the beggar what did he want?
   b) The man said to the beggar what he wanted.
   c) The man asked the beggar what he did want.
   d) The man asked the beggar what he wanted.

Q70. Which of the following is correct?
   a) The poet and the novelist is dead.
   b) The poet and novelist is dead.
   c) The poet and novelist are dead.
   d) The novelist with the poet are dead.

Q71. Complete the following sentence using the correct **modal**.
   You _____ laugh at his mistake.
   a) can't
   b) shouldn't
   c) couldn't
   d) won't

Q72. Find out which part of the following sentence has an error.
   a) It is earth's
   b) magnetic field
   c) that made
   d) a compass works.

Q73. Change the voice of the following sentence.
   This news shocked me.
   a) I was shocked by this news
   b) I was shocked with this news.
   c) I was shocked at this news.
   d) I was shocked to this news.

Q74. Rearrange the following words / phrases to make meaningful sentence by choosing the correct option.
   P: was injured in
   Q: accident near Dausa
   R: yesterday Hema Malini
   S: a car
   a) RPQS
   b) RPSQ
   c) QSRP
   d) QSPR

Q75. Choose the correct synonym of **'Dexterity'**.
   a) Clumsiness
   b) Skill
   c) Lack
   d) Inability

Q76. Choose the correct antonym of **'Fortitude'**.
   a) Diffidence
   b) Promising
   c) Challenging
   d) Creative

Q77. **'With best regards'** is used in which part of a formal letter?
   a) Heading
   b) Opening
   c) Closing
   d) Body

Q78. Where should one write the date in your letter?
   a) Below sender's address
   b) Above sender's address
   c) Below recipient's address
   d) Above subject line

Q79. I spent _____ money I had.
   a) a little
   b) few
   c) the little
   d) little

Q80.My mother, along with others, _____ worried.
   a) were
   b) are
   c) have
   d) was

For questions 1 to 5, choose the correct option to fill in the blank.
Q81. She _____ taking extra classes in the evening the weekend.
   a) has
   b) was
   c) were
   d) have

Q82. Internal dispute will _____ the downfall of the community.
   a) haste
   b) hasten
   c) hasting
   d) hasted

Q83. He _____ many foreign places before he returned home. Now he is working
   for the welfare of his remote village.
   a) had seen
   b) have been seen
   c) seen
   d) was seeing

Q84. I _____ reached the railway station before the train_____.
   a) shall have, arrives
   b) will be, arrives
   c) shall have, arrived
   d) will, arrive

Q85. "I have _____ five hundred rupees" means I have not more than five hundred
   rupees with me.
   a) hardly
   b) some more
   c) only
   d) more

Q86. Choose the word with the correct spelling.
   a) Teatotaller
   b) Teatotallar
   c) Teetotaller
   d) Teetotaler

Q87. Which of the following words means '**Putting off for tomorrow what can be done Today'**?
    a) Proclamation
    b) Procrastination
    c) Profanation
    d) Proliferation

Q88. The court declared _____ the allotment of plots in the lottery.
    a) null and void
    b) in making off
    c) bury the hatchet
    d) a hard nut to crack

Q89. Choose the correct **Indirect Speech** of the sentence given below.
   The teacher said to us, "The earth moves round the sun."
    a) The teacher told us that the earth moved round the sun.
    b) The teacher told us that the earth moves round the
    c) The teacher taught us that the earth moved round the sun.
    d) The teacher told us that the earth had moved round the sun.

Q90. Which of the following is correct?
    a) He was astonished at his success.
    b) He was astonished in his success.
    c) He was astonished on his success.
    d) He was astonished for his success.

Q91. Complete the following sentence using the correct **modal**.
   She _____ to arrive at any moment but she couldn't make it possible due to some security issues.
    a) should
    b) might
    c) may
    d) ought

Q92. Find out which part of the following sentence has an error.
    a) Originate in Ethopia, coffee
    b) was drunk in the Arab
    c) world before it
    d) came to Europe.

Q93. Change the voice of the following sentence.
   Bring a glass of water.
    a) A glass of water should have been brought.
    b) Let a glass of water be brought.
    c) A glass of water is brought.
    d) A glass of water was brought.

Q94. Rearrange the following words / phrases to make meaningful sentence by choosing the correct option.
  P: approval for setting
  Q: the Union Cabinet
  R: up the seventh Pay Commission
  S: gave its
    a) PQSR
    b) SRPQ
    c) QSPR
    d) RQSP

Q95. Choose the correct synonym of **'Decrepitude'**.
    a) Coolness
    b) Feebleness
    c) Strength
    d) Concentration

Q96. Choose the correct antonym of **'Perspicacious'**.
    a) Perceptive
    b) Astute
    c) Humble
    d) Ignorant

Q97. What is written on the top of a formal letter on the left side?
    a) Sender's address
    b) Receiver's address
    c) Date
    d) Salutation

Q98. Which of these is not a part of letter?
    a) Date
    b) Greeting
    c) Photo
    d) Signature

Q99. After her long illness Ridhima is trying her best to _____ her loss in study.
    a) make up for
    b) do away with
    c) pass off
    d) give out

Q100. Bread and butter _____ what the poor want.
    a) are
    b) has
    c) is
    d) has been

Answer Key

1	(a) 98 kg	**16**	(D) 36	**31**	(D)1/2	**46**	(a) 24
2	(d) 1	**17**	(D) ±2√6	**32**	(B) 4/13	**47**	(A) 0
3	(B) $2^2 \times 7^2$	**18**	(C) -3	**33**	() 18/23	**48**	(A) x-axis
4	(d) x^4y^3z	**19**	(D) p = 2	**34**	(B) 1/5	**49**	(A) 2
5	(b) 60	**20**	(A) 12, 13	**35**	(A) 1/6	**50**	(C) 1
6	(c) (√2 -√3)(√2 + √3)	**21**	(A) 6	**36**	(B) **Mode = 3 Median – 2 Mean**	**51**	(B) √3
7	(B) **rational number**	**22**	(A) 462 cm²	**37**	(D) 50	**52**	(A) $2\pi r^2$
8	(a) linear equation	**23**	(C) **cone**	**38**	(A) 0	**53**	(D) $\frac{1}{2}\pi r + 2r$
9	(B) both negative	**24**	(B) 3 : 1	**39**	(B) Median	**54**	(C)
10	(B) x² + 9x + 20	**25**	(b) 45°	**40**	(C) 15 cm	**55**	(A) 1
11	(B) -2	**26**	(d) 4 cm	**41**	(B) irrational	**56**	(D) $\frac{upper\ limit+lower\ limit}{2}$
12	(c) -10x – 25y + 15 = 0	**27**	(B) 44 cm	**42**	(B) 1	**57**	(B)$2\pi r(h + r)$
13	(D) **intersecting or coincident**	**28**	(C) 3.66 cm	**43**	(A)2	**58**	(A) l-(n-1)d
14	(c) no solution	**29**	(B) 77/2 cm²	**44**	(D) D= 0	**59**	(A) 4
15	(D) 19/5, 6/5	**30**	(d) 60°	**45**	(A) C/A	**60**	(D) 60^0