



**HEC Complete
Paper pre medical
2023 (in English
portion both blue
 and green 
paper MCQS are
mixed)**

VERBAL REASONING

Choose the lettered word or phrase that is **MOST NEARLY OPPOSITE** in meaning to the word in capital letters.

1. We are going to **WIND-UP** our business which our grandfather had _____ in 1947.
 - A. closed
 - B. decorated
 - C. designed
 - D. established
2. I had to _____ all my shares immediately after I **BOUGHT** them.
 - A. decorate
 - B. distribute
 - C. purchase
 - D. sell
3. Some people have **OPTIMISTIC** approach towards life rather than a _____ one.
 - A. logistic
 - B. majestic
 - C. nostalgic
 - D. pessimistic

Four lettered pairs (A to D) follow a related pair of words given in the question. Select the lettered pair that best expresses a relationship similar to that expressed in the original pair in capital letters.

4. **BOAT: OAR::**

- A. book: page
- B. car: steering wheel
- C. sweet: sour
- D. teacher: pupil



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5. SINGULAR: PLURAL::

- A. below: beneath
- B. haughty: vain
- C. least: most
- D. lift: soar

6. OCEAN: WEEDS::

- A. kids: parents
- B. movie: actors
- C. loyal: state
- D. forest: bushes

7. FINGER: GUITAR::

- A. beak: bird
- B. level: vertical
- C. snake: mice
- D. stick: drum

8. TEETH: BITE::

- A. knife: cut
- B. tree: green
- C. drop: ocean
- D. language: alphabet

9. SUMMARY: PRECIS::

- A. ladle: pan
- B. monitor: screen
- C. order: obedience
- D. reverse: push

Questions 10-15

After years of feeling underrated and overlooked in mainstream football pundits and press, women's coming into its own this season thanks to social New research shows that the women's version of is now the third biggest team sport in the UK in participation, behind only men's football and cricket. previous lack of recognition is being overcome by turning to social networking to follow the sport.



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6. OCEAN: WEEDS::

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Questions 7-12

After years of feeling underrated and overlooked by mainstream football pundits and press, women's football is coming into its own this season thanks to social media. New research shows that the women's version of the game is now the third biggest team sport in the UK in terms of participation, behind only men's football and cricket. Its previous lack of recognition is being overcome by fans turning to social networking to follow the sport. The second ever season of the Football Association's Women's Super League (WSL) kicks off on Sunday, and eight of England's top female footballers, one from each of the top clubs, will take the unprecedented step of wearing their success on their sleeve by displaying their Twitter account names on their kit. The new semi-professional league, the top A tier of women's football, was launched by the FA last year as a platform to drive forward the women's game and the association claims that it will be spending £3m on promotion in the first three years of the league. Since the WSL launched, attendances have increased by more than 600%, viewing figures of live broadcast matches, at 450 000, are on a par with those of the men's Scottish Premier League, and the social media channels now attract more than 80 000 followers. It has transformed the player-fan relationship by making it a fully interactive league. Research commissioned for the FA by Sport England Active People ahead of the 2012 season shows that the low profile of women's football is what is driving fans to Twitter and Facebook for news. Fans are up to seven times as interactive as those of the men's game. The FIFA Women's World Cup was the most tweeted-about event in the world in July 2011 with 7196 tweets per second at its peak. It remains seventh in the list of the most tweets per second, above the UEFA Champions



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League in 11th position. But the findings show that while there are 12 times as many news articles with mentions of women's football per month, relative to the number of people who attend matches, men's football receives three times as many headlines, relative to the number of fans who attend. 'It is understandable in a way,' said England international and Arsenal Ladies midfielder Steph Houghton. 'It's difficult because the men's game is so big and attracts so much money and sponsorship and so it's always going to take priority. 'But with digital media we can really forge ahead. We don't need to struggle to get a few lines in a newspaper, we can do it for ourselves; fans can interact with players and find out about fixtures and get really involved on match days - even if they are not at the game themselves.' Houghton, 23, has been selected as the FA WSL digital ambassador for Arsenal Ladies this season. Each club in the league will pick one player who will wear their Twitter address.

7. Women's football felt underrated and overlooked because mainstream press _____.

- A. gave them a lot of coverage
- B. gave them little coverage
- C. granted them awards and prizes
- D. printed news articles about them

8. Women football in the UK ranks third as they have _____ popularity.

- A. abandoned
- B. declined
- C. obtained
- D. sold

9. Fans of the game have started to follow them on social media which has overcome their past lack of _____.

- A. acknowledgement
- B. performance
- C. respect
- D. seriousness



10. Some have increased level of interaction with women football players as to _____ if compared to men's football.

- A. fun
- B. event
- C. tournament
- D. participant

11. In order to display their Twitter address, _____ participating in the league will nominate a player.

- A. each club
- B. each coach
- C. every fan
- D. every media houses

12. She has been _____ for the best student of the year award by the committee.

- A. nominated
- B. nominates
- C. nominating
- D. nomination

Complete the sentences by choosing the best option, from the given lettered choices (A to D) below each.

13. His friends were unaware of his _____ intentions.

- A. cruelty
- B. evil
- C. secrecy
- D. obviously

14. He said that he would _____ there before the game ended.

- A. reaches
- B. reach
- C. reached
- D. reaching



15. I think the material of the red shirt is different _____ the blue shirt.

- A. before
- B. for
- C. form
- D. from

16. She will not be able to secure victory _____ she goes through the required painstaking hard work.

- A. because
- B. until
- C. after
- D. habitually

17. He was _____ the moon when he heard the news of his position in the exams.

- A. over
- B. under
- C. upon
- D. inside

18. They were used to _____ to news on radio when they were students.

- A. listen
- B. listens
- C. listening
- D. listened

19. It was an _____ from his confusion that he was involved in the crime.

- A. evidence
- B. evidently
- C. incident
- D. evident



- B. nominates
- C. nominating
- D. nomination

Complete the sentences by choosing the best option, from the given lettered choices (A to D) below each.

16. After Baber Azam's severe training, all the team members _____ to his improved performance in upcoming matches.

- A. looking forward
- B. look into
- C. look forward
- D. look down upon

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25. The lady with the lamp was a symbol of **DETERMINATION** which indicates that she possessed lot of _____.

- A. persistence
- B. sluggishness
- C. superiority
- D. wealth

26. Telling lies habitually is _____ in every society and **DISLIKED** by everyone.

- A. detested
- B. praised
- C. spied
- D. tested



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QUANTITATIVE REASONING

27. Which of the following is a rational number?

- A. π
- B. 1.252729...
- C. 7.323232...
- D. $\sqrt{27}$

28. If $f(x) = 3x^4 - 2x^2 + 7$ then value of $f(\sqrt{2})$ is _____.

- A. 2
- B. 3
- C. $\sqrt{15}$
- D. 15

29. The sale price of an article is Rs. 3597 with a profit of 9%. The cost price of article is _____.

- A. Rs. 310.50
- B. Rs. 3197.33
- C. Rs. 3250
- D. Rs. 3300

30. The difference of face value from place value of 5 in 7956 is _____.

- A. -495
- B. -45
- C. 0
- D. 45

31. Car A is moving with a speed of 50km/h towards car B which is moving away from car A with a speed of 90 km/h. What is the relative speed of two cars?

- A. 40 kms
- B. 70 kms
- C. 90 kms
- D. 140 kms



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32. The sum of exterior angles of a regular octagon is _____.

- A. 30°
- B. 45°
- C. 360°
- D. 1080°

33. The age of mother is 3 times the age of her daughter. Six years ago, the age of mother was 5 times the age of her daughter. The age of mother after two years will _____.

- A. 32 years
- B. 36 years
- C. 38 years
- D. 40 years

34. The number of 5-digit numbers, that can be formed from the digits 4, 3, 5, 7, 9 is _____.

- A. 60
- B. 120
- C. 140
- D. 180

35. Two angles whose sum is 90° are called _____ angles.

- A. complementary
- B. right
- C. obtuse
- D. supplementary

36. $7\sqrt{2} - \sqrt{18} =$ _____.

- A. $2\sqrt{6}$
- B. $2\sqrt{2}$
- C. $3\sqrt{2}$
- D. $4\sqrt{2}$



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37. The equation $x^2 + y^2 = 1$ represents _____.

- A. parabola
- B. ellipse
- C. circle
- D. hyperbola

38. $\log_2 2 \times \log_2 5 \times \log_2 3 =$ _____.

- A. 0
- B. 1
- C. 2
- D. 3

39. A man invests Rs. 10000 in the bank to get an interest of Rs. 2200 in five years. The rate of simple interest will be _____.

- A. 4.4%
- B. 5%
- C. 6.6%
- D. 8%

40. Which of the following is a binary operation?

- A. 4th root
- B. Cube
- C. Intersection
- D. Square

41. What is the area of a pavement 2-meter wide which is drawn inside a rectangular park of dimensions 16 by 20?

- A. 35 m²
- B. 37 m²
- C. 128 m²
- D. 160 m²



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42. The arithmetic mean of 15 numbers is 10. When two more values are added to the data the new arithmetic mean becomes 10. The value of two numbers is _____ if one number is 4 more than other.

- A. 7, 11
- B. 4, 16
- C. 8, 12
- D. 9, 13

43. The cost of 6 bats and 3 balls is Rs. 4500 and cost of 3 bats and 6 balls is Rs. 3600. The cost of one bat and a ball is _____.

- A. Rs. 300
- B. Rs. 600
- C. Rs. 750
- D. Rs. 900

44. Pipe A can fill a tank in 45 minutes. If both pipes A and B are opened the tank is full in 15 minutes. In how much time tank will be full if pipe B is opened?

- A. 20 minutes
- B. 22.5 minutes
- C. 30 minutes
- D. 35.5 minutes

45. The sum of, sum and product of roots of equation $3x^2 - 7x + 15 = 0$ is _____.

- A. $8/3$
- B. 5
- C. $22/3$
- D. $35/3$

46. The cost price of 8 suits is Rs. 13400. What is the cost price of such 5 suits?

- A. Rs. 8000
- B. Rs. 8275
- C. Rs. 8375
- D. Rs. 8425



47. A boy travels 210 kms on a train in 3 hours. Then he travels 30 kms in one hour by bus. The average speed of boy for whole journey is _____.

- A. 50 km/h
- B. 55 km/h
- C. 60 km/h
- D. 70 km/h

48. The ratio between the length of square base of two pyramids is 3:7. What is the ratio between their volumes if the two pyramids are of equal height?

- A. 3:7
- B. 9:49
- C. 27:343
- D. 81:1728

49. What is the range in the data 2, 7, 9, 13, 2, 0, 3, -3, 7, 9, 8?

- A. 11
- B. 13
- C. 14
- D. 16

50. The arithmetic mean of 2, 4, 5, 9 is _____.

- A. 4
- B. 5
- C. 7
- D. 10

51. The total surface area of a topless box having dimensions' length = 3, width = 6 and height = 10 is _____ Sq units.

- A. 156
- B. 186
- C. 198
- D. 216



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52. The number of terms in the expression $x^3y^2 - xy^2 + y^2 + 4$ is _____.

- A. 3
- B. 4
- C. 5
- D. 8

53. Convert the ratio 21/30 into percentage.

- A. 21%
- B. 42%
- C. 70%
- D. 85%

54. Which of the following measures does NOT form a triangle?

- A. 5, 9, 7
- B. 6, 6, 10
- C. 7, 5, 12
- D. 15, 25, 34

55. $3 + \{ (50 - 10 \times 2) \div 5(15 - 13) \} + 5 =$ _____.

- A. 3
- B. 5
- C. 10
- D. 11

56. The value of x in the equation $\frac{x}{5} - \frac{3}{2} = \frac{5x}{6} + \frac{2}{5}$ is _____.

- A. -3
- B. -3/2
- C. 3/2
- D. 3

57. What is the angle between the hands of clock at 10:30?

- A. 85°
- B. 105°
- C. 125°
- D. 135°



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PHYSICS

59. If two vectors are equal in magnitude but opposite in direction, their resultant vector will be _____

- A. free
- B. null
- C. position
- D. unit

60. There will be maximum work when angle between force "F" and displacement "S" is _____.

- A. 0°
- B. 30°
- C. 45°
- D. 90°

61. Conversion of alternating current into direct current is known as _____.

- A. conversion
- B. impedance
- C. rectification
- D. transformation

62. Which one of the following is NOT the effect of current?

- A. Chemical effect
- B. Compton's effect
- C. Heating effect
- D. Magnetic effect

63. Which one of the following is the dimensions of acceleration?

- A. LT^{-1}
- B. MLT^{-1}
- C. LT^{-2}
- D. LT^2



64. Which one of the following effects is being used for tracking a satellite?

- A. Compton's effect
- B. Dopplers effect
- C. Green house effects
- D. Photoelectric effect

65. A body is said to be in uniform velocity, if it travels _____ distance in _____ intervals of time in _____ direction.

- A. equal ... equal ... different
- B. equal ... equal ... same
- C. equal ... unequal ... different
- D. equal ... unequal ... same

66. Production of X-rays is the result of _____.

- A. Compton effect
- B. Dopplers effect
- C. Pair production
- D. Photoelectric effect

67. Geothermal energy is due to _____.

- A. burning of fossil fuels on surface of earth
- B. earth's natural heat
- C. sun rises everyday
- D. sun's pull-on earth

68. By all the following ways we can increase the induced current EXCEPT:

- A. Moving the coil at slow and steady speed
- B. Moving the loop faster
- C. Replacing a loop by a coil of many turns
- D. Using a stronger magnetic field



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69. The combined effect of resistance and _____ in a circuit is known as impedance and is denoted by Z .

- A. current
- B. reactance
- C. thermal heat
- D. voltage



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CHEMISTRY

70. Methyl orange indicator gives _____ color basic solutions.

- A. blue
- B. orange
- C. red
- D. yellow

71. The process of mixing of atomic orbitals having different shapes and energy to make molecular orbitals of same shape and energy is termed as _____.

- A. crystallization
- B. hybridization
- C. molecularization
- D. sublimation

72. Which one of the following has square planar geometry?

- A. $[\text{Ag}(\text{CN})_2]^+$
- B. $[\text{Ag}(\text{NH}_3)_2]^+$
- C. $[\text{Pt}(\text{NH}_3)_4]^{2+}$
- D. $[\text{Zn}(\text{CN})_4]^{2+}$

73. Systematic error is caused by the defect in the _____.

- A. analytical method
- B. personal inexperience's
- C. repetition of same experiment with variable readings
- D. unknown reasons

74. When alkanes are treated with chlorine or bromine in the presence of _____, alkyl halides are formed.

- A. diffused sunlight
- B. direct sunlight
- C. high pressure
- D. high temperature



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75. Who discovered the positive rays (protons)?

- A. Chadwick
- B. Goldstein
- C. Heinrich Geissler
- D. J.J. Thomson

76. The _____ state is the one in which the molecules are widely separated from one another but having negligible volume.

- A. gaseous
- B. liquid
- C. plasma
- D. solid

77. Which one of the following is an example of endothermic reaction?

- A. Burning of coal in air to produce carbon dioxide
- B. Reaction of carbon and hydrogen to form carbon dioxide
- C. Reaction of Hydrogen and iodine to form hydrogen iodide
- D. Reaction of methane with oxygen to form carbon dioxide and water

78. The first ionization energy of alkaline earth metals decreases down the group, mainly due to _____ down the group.

- A. atomic number decrease
- B. atomic radius decrease
- C. atomic size decrease
- D. atomic size increase



79. Which one of the following is the best application of K_c value of a reaction?

- A. Used to predict the direction of a reaction
- B. Used to predict the extent to which a reaction stopped
- C. Used to predict the final enthalpy change in products
- D. Used to predict the nature of products

80. Which one of the following principle/rule states that for any given atom, the electrons are filled to the orbits of lowest energy in sequence, two electrons in each orbit?

- A. Aufbau Principle
- B. Hund's rule
- C. Le Chatelier principle
- D. Pauli's exclusion principle



BIOLOGY

81. pBR322 is an example of a _____.

- A. Cosmid
- B. Plasmid
- C. Recombinant DNA
- D. Restriction enzyme

82. Which one of the following is NOT abiotic factor?

- A. Food
- B. People
- C. Temperature
- D. Water

83. Indole Acetic acid belongs to which class of plant hormones?

- A. Absciscic acid
- B. Auxins
- C. Cytokinin
- D. Gibberellins

84. Which one of the following is made up of glucose and fructose combined with glycosidic linkage?

- A. Dextrose
- B. Lactose
- C. Maltose
- D. Sucrose

85. In retroviruses, heredity material is present in the form of _____.

- A. DNA
- B. DNA and Protein
- C. Protein
- D. RNA



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86. Which part of the alimentary canal receive pancrea juice directly?

- A. Colon
- B. Duodenum
- C. Esophagus
- D. Stomach

87. The cell wall of fungi is made up of _____ material.

- A. cellulose
- B. chitin
- C. peptidoglycan
- D. proteins

88. Which type of valves are present in veins?

- A. Arterio-ventricular valves
- B. Bicuspid valves
- C. Semilunar valves
- D. Tricuspid valves

89. The X-rays diffraction pattern of DNA molecule sugges that it has a shape of helix with a diameter of _____ nm.

- A. 1
- B. 2
- C. 3
- D. 4

90. The branch of biology which deals with the study of development of zygote to fetus, is termed as _____.

- A. embryology
- B. genetics
- C. morphology
- D. taxonomy



91. Double fertilization in plants is the characteristic feature of _____.

- A. angiosperms
- B. bryophytes
- C. ferns
- D. gymnosperms

92. Which type of skeleton is present in earthworm?

- A. Endoskeleton
- B. Exoskeleton
- C. Hydrostatic skeleton
- D. Exo and endoskeleton

93. Photolysis of water, occurs at PSII but NOT PSI, what is the main reason behind this difference?

- A. Absorbed energy difference of two Photosystems
- B. Chlorophyll a structure
- C. Chlorophyll b structure
- D. Morphology of thalloid membranes

94. When red flower plant is crossed with white flower color plant and the result is a pink flower color plant in F₁ generation. Which type of dominance is depicted in this example?

- A. Co-dominance
- B. Complete dominance
- C. Incomplete dominance
- D. Over dominance

95. Low level of blood Ca^{++} ions stimulate the _____ hormone.

- A. Adrenaline
- B. Oxytocin
- C. Parathyroid
- D. Thyroxin



96. Which one of the following ions is mainly involved in opening and closing of stomata?

- A. Cl^-
- B. H^+
- C. K^+
- D. Na^+

97. In animal cell, microtubules originate from _____ during mitosis.

- A. cell membrane
- B. cell wall
- C. centriole
- D. nucleus

98. Non-competitive inhibitors mostly bind to _____ site of an enzyme.

- A. active
- B. allosteric
- C. binding
- D. catalytic

99. *Brassica* plant is an example of _____ plants.

- A. Halophytes
- B. Hydrophytes
- C. Mesophytes
- D. Xerophytes

100. Cleavage results in the formation of a round closely packed mass of blastomeres, termed as _____.

- A. Blastula
- B. Gastrula
- C. Morula
- D. Neurula



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