

Maximum marks – 300

Time – 2:30 Hours

Note – Question paper contains three parts –

Part – A Mathematics	50 Questions	100 Marks
Part – B English	50 Questions	100 Marks
Part – C Science and Social Science	50 Questions	100 Marks

- All Questions are compulsory .
- There is No Negative Marking .
- Read the question paper carefully .

Part – A (MATHEMATICS)

1. Which of the following equations has real roots?

- (a) $3x^2 + 4x + 5 = 0$
 (b) $x^2 + x + 4 = 0$
 (c) $(x - 1)(2x - 5) = 0$
 (d) $2x^2 - 3x + 4 = 0$

2. If a and b are the roots of the equation $x^2 - 6x + 6 = 0$, then the value of $a^2 + b^2$ is:

- (a) 36
 (b) 24
 (c) 12
 (d) 6

3. For what values of 'k', the equation $x^2 + 2(k - 4)x + 2k = 0$ has equal roots?

- (a) 8, 2
 (b) 6, 4
 (c) 12, 2
 (d) 10, 4

4. Find the value of $2x - 3y$ if $(3, 2)$, $(6, 3)$, (x, y) and $(6, 5)$ are the vertices of a parallelogram.

- (a) -15
 (b) 15
 (c) 3
 (d) 0

5. $\sin 120^\circ \cos 150^\circ - \cos 240^\circ \sin 330^\circ =$

- (a) 1
 (b) -1
 (c) $\frac{2}{3}$

(d) $-\left(\frac{\sqrt{3}+1}{4}\right)$

6. If $\tan \theta = \frac{1}{\sqrt{7}}$ and θ is an acute angle, then

$$\frac{\operatorname{cosec}^2 \theta - \sec^2 \theta}{\operatorname{cosec}^2 \theta + \sec^2 \theta} =$$

- (a) $\frac{3}{4}$
 (b) $\frac{1}{2}$
 (c) 2
 (d) $\frac{5}{4}$

7. If $\sin(\alpha + \beta) = 1$, $\sin(\alpha - \beta) = \frac{1}{2}$ then

$$\tan(\alpha + 2\beta) \tan(2\alpha + \beta) =$$

- (a) 1
 (b) -1
 (c) 0
 (d) None

8. If $7 \operatorname{cosec} \theta - 3 \cot \theta = 7$, then the value of $7 \cot \theta - 3 \operatorname{cosec} \theta$ is equal to

- (a) 5
 (b) 3
 (c) $\frac{7}{3}$
 (d) $\frac{3}{7} + 3x$

9. Find the value of p , and the roots of the equation $2x^2 - 33x + p = 0$, given that one root is ten times the other.

- (a) 15
 (b) $\frac{3}{2}$
 (c) 45
 (d) None

10. If α, β, γ are the roots of $2x^3 - 5x^2 + 3x - 1 = 0$, find $\frac{1}{\alpha\beta} + \frac{1}{\beta\gamma} + \frac{1}{\gamma\alpha}$.

- (a) $\frac{3}{2}$
- (b) $\frac{3}{5}$
- (c) $\frac{1}{5}$
- (d) 5

11. The sum of the first and the third term of a G.P. is 15 and that of the 5th and the 7th terms is 240. Find the 9th term.

- (a) 678
- (b) 786
- (c) 867
- (d) 768

12. What is the sum of all two-digit numbers that give a remainder of 3 when they are divided by 7?

- (a) 666
- (b) 676
- (c) 683
- (d) 777

13. How many three digit numbers are divisible by 6?

- (a) 102
- (b) 150
- (c) 151
- (d) 966

14. Find the sum of all natural numbers not exceeding 1000, which are divisible by 4 but not by 8.

- (a) 62500
- (b) 62800
- (c) 64000
- (d) 65600

15. If 7 times the 7th term of an A.P. is equal to 11 times the 11th term, then 18th term is

- (a) 0
- (b) 35
- (c) 1
- (d) none

16. Express $0.\overline{235}$ in the $\frac{p}{q}$ form, where p and q are integers and $q \neq 0$.

- (a) $\frac{235}{990}$
- (b) $\frac{1}{99}$
- (c) $\frac{233}{990}$
- (d) $\frac{235}{999}$

17. The total number of factors of 120 is

- (a) 8
- (b) 10
- (c) 12
- (d) 16

18. The number of zeroes at the end of $15^{30} \times 10^{12}$ is

- (a) 30
- (b) 12
- (c) 42
- (d) 6

19. If $x + 2y = 8$, $2x + 3z = 16$ and $4y + 5z = 32$, then the value of x, y and z will be

- (a) 1, 2, 3
- (b) -1, 2, 3
- (c) 2, 3, 4
- (d) -2, -3, -4

20. If $2^{x+y} = 4$ and $2^{x-2y} = \frac{1}{8}$, then the value of x will be

- (a) 3
- (b) 1
- (c) $\frac{1}{3}$
- (d) 0

21. If $3^{2x^2-9x} = (81)^{-1}$, then x is equal to

- (a) $4, \frac{1}{2}$
- (b) $2, \frac{1}{4}$
- (c) 2, 1
- (d) Both (a) and (b)

22. Which of the equations will have real and distinct roots?

- (a) $\sqrt{5}x^2 - 3\sqrt{2}x + 2\sqrt{5} = 0$
- (b) $2\sqrt{3}x^2 + 2x - \sqrt{3} = 0$
- (c) $x^2 - 4x + 5 = 0$
- (d) None

23. Which of the quadratic equation has roots 4 more than the roots of the equation $x^2 + 3x + 1 = 0$?

- (a) $x^2 - 5x + 5 = 0$
- (b) $x^2 - 5x - 5 = 0$
- (c) $x^2 + 5x + 5 = 0$
- (d) None

24. The values of x for the equation $x^2 + \frac{1}{x^2} =$

$$2 + \frac{3}{2} \left(x - \frac{1}{x} \right) \text{ is}$$

- (a) ± 1
- (b) 0
- (c) ± 2

(d) None

25. The ratio of the sum of first 'P' terms of two AP series is $(4P + 16) : (7P - 17)$, what is the ratio of their 6th terms?

(a) 1

(b) $\frac{15}{43}$

(c) $\frac{59}{160}$

(d) None

26. The sum of 3 terms of an AP is 39 and their product is 2080, the terms are

(a) 13, 15, 17

(b) 14, 18, 22

(c) 10, 13, 16

(d) None

27. What is the value of 11th term of an AP series, if the sum of its first 11 terms is equal to the sum of 1st 10 terms?

(a) 11

(b) 1

(c) 0

(d) None

28. In an AP series of 100 terms $a_1 + a_{50} + a_{51} + a_{100} = 400$, so what is the sum of all the terms of the series?

(a) 10000

(b) 5000

(c) 1000

(d) None

29. What is the value of 9th term of an AP series whose 6th term and 12th terms are 32 and 56, respectively?

(a) 42

(b) 44

(c) 34

(d) None

30. The points (1, 7), (3, 3) and (7, -5) form a

(a) Straight line

(b) Right triangle

(c) Isosceles triangle

(d) Scalene triangle

31. If the mid-points of the sides of a triangle are (1, 5), (2, 6) and (3, 2). Then, the coordinates of the centroid of the triangle is

(a) $(2, \frac{13}{3})$

(b) (3, 6)

(c) (6.5, 3)

(d) (3.5, 6)

32. If O (2, 3) is the centroid of Triangle ABC with vertex A(1, 5), then length of median AD is

(a) $(\frac{3\sqrt{5}}{2})$

(b) $3\sqrt{5}$

(c) $\frac{\sqrt{3}}{2}$

(d) None

33. For what value of k, the vertices (2, 1), (3, 3) and (5, k) form an equilateral triangle?

(a) 4

(b) 2

(c) 3/4

(d) No such value exists

34. A ladder leaning against a vertical wall is twice the length of the wall. The angle made by the foot of the ladder on the ground is

(a) 60°

(b) 30°

(c) 45°

(d) 90°

35. A man standing on a light house, observes the angle of elevation of a boat coming towards the light house to be 60° from 30° in 15 min. How much time will the boat takes to reach the foot of the light house?

(a) 10 min

(b) 7.5 min

(c) 8 min

(d) None

36. The mode from given grouped data would be

Class Interval	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60
Frequency	5	7	6	8	4

(a) 42

(b) 43

(c) 44

(d) 45

37. Given data shows marks of 32 students in an examination. Mean of the marks will be

Class Interval	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
Frequency	12	6	8	4	2

- (a) 18.125
- (b) 21.875
- (c) 22.425
- (d) 22.545

38. If the mean and median are 25 and 28 respectively, then find the value of the mode.

- (a) 35
- (b) 34
- (c) 36
- (d) 134

Directions (Q. Nos. 39 - 41) Study the given information carefully and answer the questions based on it.

The Marks (out of 100) obtained by a group of students in a science test are 85, 76, 90, 85, 39, 48, 56, 95, 81 and 75.

39. Find the highest and the lowest marks obtained by the students.

- (a) 48, 56
- (b) 95, 39
- (c) 56, 48
- (d) 39, 95

40. Find the range of the marks obtained.

- (a) 52
- (b) 51
- (c) 56
- (d) 48

41. Find the mean marks obtained by the group.

- (a) 73
- (b) 71
- (c) 57
- (d) 74

42. Probability that a number selected from 1, 2, 3, 4, ..., 35 is a prime number, is

- (a) $\frac{13}{35}$
- (b) $\frac{12}{35}$
- (c) $\frac{9}{35}$
- (d) $\frac{11}{35}$

43. In a factory 50 units are manufactured every day out of which 10% get wasted. If a unit is selected at random, what is the probability of it being a non-defective unit?

- (a) $\frac{1}{10}$
- (b) $\frac{1}{5}$
- (c) $\frac{1}{2}$
- (d) $\frac{9}{10}$

44. Out of the letters E, T and N, a three-letter word is formed using all the 3 letters. What is the probability that the word formed is TEN?

- (a) $\frac{1}{6}$
- (b) $\frac{1}{3}$
- (c) $\frac{1}{2}$
- (d) $\frac{2}{3}$

45. When two dice are rolled together, the probability of getting an even number on one dice and a multiple of 3 on the other is

- (a) $\frac{1}{6}$
- (b) $\frac{7}{36}$
- (c) $\frac{4}{9}$
- (d) $\frac{5}{36}$

46. There are 100 letters and 100 corresponding envelopes. If the letters are put in the envelopes, what is the probability that exactly one letter will go in the wrong envelope?

- (a) $\frac{1}{100}$
- (b) $\frac{1}{50}$
- (c) $\frac{1}{25}$
- (d) None

47. In a single throw of two dice, find the probability that neither a doublet nor a total of 8

- (a) $\frac{11}{36}$
- (b) $\frac{5}{18}$
- (c) $\frac{13}{18}$
- (d) $\frac{3}{16}$

48. Find the probability that a leap year, selected at random, will contain 53 Sundays.

- (a) $\frac{1}{7}$
- (b) $\frac{2}{7}$
- (c) $\frac{3}{7}$
- (d) None

49. One number is chosen from numbers 1 to 200. Find the probability that it is divisible by 4 or 6?

- (a) $\frac{4}{50}$
- (b) $\frac{61}{200}$
- (c) $\frac{33}{100}$
- (d) $\frac{67}{200}$

50. Find the unit digit of $1 + 9 + 9^2 + \dots + 9^{2008}$

- (a) 3
- (b) 9
- (c) 1
- (d) 0

ENGLISH

Spot the error

- 51. (a) He is enough tall/ (b) to be selected as sub-inspector/ (c) in Delhi Police/ (d) No error
- 52. (a) In refused to accompany him/ (b) because he was/ (c) 80 boring/ (d) no error
- 53. (a) My father/ (b) is very quicker than/ (c) I at chess/ (d) no error
- 54. (a) It rained/ (b) like cats and dogs/ (c) throughout the night/ (d) no error.
- 55. (a) When she received the good news/ (b) she ran straightly/ (c) to call up her parents/ (d) no error.
- 56. (a) Everyone agrees that/ (b) the Gange is the holiest/ (c) of all other rivers of India/ (d) no error.
- 57. (a) He is the most/ (b) intelligent and also/ (c) the very talented student of the college/ (d) no error.
- 58. He black long/ (b) hair adds/ (c) glamour to her looks/ (d) no error.
- 59. (a) Everybody knows/ (b) that Radha is the most unique/ (c) singer if his college/ (d) no error.
- 60. (a) The faster he completes/ (b) the work given to/ (c) him, the largest will be his profit/ (d) no error.
- 61. (a) All the doubts are cleared/ between/ (c) you and I / (d) no error.
- 62. (a) Put you in my position/ (b) and you will release/ (c) the problem faced by my profession/ (d) no error.
- 63. (a) I follow/ (b) your suggestion/ (c) and nobody's else/ (d) no error.
- 64. (a) Both of them will not/ (b) refutes/ (c) the charges/ (d) no error.
- 65. (a) He, you and I/ (b) shall arrange everything/ (c) and shall not ask them for help/ (d) no error.

One word substitution if following sentences.

- 66. Skilful at handling things.
(a) handicraft (b) clever
(c) dexterous (d) fastidious
- 67. That which is out of place
(a) Anachronistic (b) Obsolete
(c) Incongruous (d) Archaic
- 68. Science of heredity
(a) Hereditary (b) Genetics
(c) Genesis (d) Inheritance
- 69. Occurring at night
(a) Nightly (b) Dark
(c) Neurotic (d) Nocturnal

Write synonyms of the following.

- 70. Abeyance
(a) Revival (b) Operation
(c) Inactivity (d) Continuation
- 71. Excogitate
(a) Communication (b) Invent
(c) Die (d) Ignore
- 72. Virtuoso
(a) Amateur (b) Unskilled
(c) Rookie (d) Ace

73. Nascent

- (a) Nasal (b) Budding
- (c) Mature (d) Permanent

Write antonyms of the following.

- 74. Capacious
(a) Cramped (b) Broad
(c) Comfortable (d) Generous
- 75. Abutting
(a) Touching (b) Far
(c) Bordering (d) Joining
- 76. Punctilious
(a) careful (b) formal
(c) exact (d) easy-going

77. Stratagem

- (a) Frankness (b) Ruse
- (c) Gimmick (d) Ploy

Choose suitable idioms and phrase of the following words.

- 78. To take with a grain of salt
(a) To make more palatable
(b) to take a small quantity of
(c) to make something meaningful
(d) to accept with misgiving

79. To talk through one's hat
 (a) to talk carefully (b) to talk softly
 (c) to talk nonsense (d) to talk sensitively
80. The thief passed himself off as a ticket examiner.
 (a) described himself (b) deceived everyone
 (c) disguised himself (d) was regarded

Arrange the sentence in proper order.

81. P: It would be better to speak of uniformities of nature.
 Q: Law of nature are not commands but statements of facts
 R: This would do away with elementary fallacy that a law implies
 S: The use of the word law in this context is rather unfortunate.
 (a) QSRP (b) SQRP (c) QSPR
 (d) SQPR
82. P: When the game of life is finally over there is no second chance to correct our error.
 Q: Time Is greater equalizer of all mankind.
 R: Time offers opportunity but demands a sense of regards
 S: It has taken away the best and the worst of us without regard of either.
 (a) QSRP (b) RSQP (c) PQRS
 (d) RSPQ
83. P: It has been the handmaid of the ruling class.
 Q: Therefore, ever since the dawn of civilization, persons in power have always tried to supervise or control education.
 R: Education is an instrument which impart knowledge and therefore, indirectly controls power.
 S: It is an old saying that knowledge is power.
 (a) SQRP (b) PRQS (c) SRQP
 (d) PSQR

Fill in the blanks with suitable words.

84. Had I seen you, I _____ my car.
 (a) would stop (b) will stop
 (c) would have stopped (d) might have stopped

85. It is high time we _____ home.
 (a) return (b) returned
 (c) had returned (d) has returned

Fill in the blanks with suitable question tags.

86. Neither of us has deceived you, _____?
 (a) have we (b) has he
 (c) haven't we (d) have they
87. Everyone has done his work, _____?
 (a) have they (b) haven't they
 (c) hasn't they (d) has they

Fill in the blanks with suitable adjectives

88. He is the _____ of two brothers.
 (a) good (b) better
 (c) best (d) more better
89. He is _____ than intelligent.
 (a) wiser (b) more wise
 (c) more wiser (d) most wise

Fill in the blanks with suitable words.

90. This is the same book _____ I wanted.
 (a) which (b) that
 (c) when (d) what
91. I am not sure _____ he will come or not.
 (a) If (b) that
 (c) whether (d) unless

Choose the correctly spelt words

92. (a) Haorizantal (b) Horizontal
 (c) Horixontal (d) Horisontal
93. (a) Inconvnenience (b) Inconevenience
 (c) inconvenience (d) inconvineince

Improve the underlined part of the sentence.

94. Suppose if he comes, what should I do?
 (a) if he comes
 (b) In case he will come
 (c) in the event of his being come
 (d) no improvement
95. Do you know to prepare the balance sheet?
 (a) Do you know to balance
 (b) Do you know to make
 (c) Do you know how to prepare
 (d) No improvement

DIRECTION: Read the following questions and answer the questions.

At a number of places in the Kashmir Valley, security forces have put coils of razor wire on roads to enforce restrictions on movement. Concertina wire or razor wire fences are used along territorial borders and in areas of conflict around the world, to keep out combatants, terrorists, or refugees. The expandable spools of barbed or razor wire get their name from concertina, a hand-held musical instrument similar to the accordion, with bellows that expand and contract. Concertina wire coils were an improvisation on the barbed wire obstacles used during World War I. The flat, collapsible coils with intermittent barbs or blades were designed to be carried along by infantry, and deployed on battlefields to prevent or slow down enemy movement. The Englishman Richard Newton is credited with creating the first barbed wire around 1845; the first patent for "a double wire clipped with diamond shaped barbs" was given to Louis François Janin of France. In the United States, the first patent was registered by Lucien B Smith on June 25, 1867, for a prairie fence made of fireproof iron wire. Michael Kelly twisted razor wires together to form a cable of wires. The American businessman Joseph F Glidden is considered to be the father of the

modern barbed wire. He designed the wire with two intertwined strands held by sharp prongs at regular intervals. Barbed wire was initially an agrarian fencing invention intended to confine cattle and sheep, which unlike lumber, was largely resistant to fire and bad weather. An advertorial published in the US in 1885 under the title 'Why Barb Fencing Is Better Than Any Other', argued that "it does not decay; boys cannot crawl through or over it; nor dogs; nor cats; nor any other animal; it watches with Argus eyes the inside and outside, up, down and lengthwise; it prevents the 'ins' from being 'outs', and the 'outs' from being 'ins', watches at day-break, at noontide, at sunset and all night long..." Barbed wire was put to military use in the Siege of Santiago in 1898 during the Spanish American War, and by the British in the Second Boer War of 1899-1902 to confine the families of the Afrikaans-speaking Boer fighters. World War I saw extensive use of barbed wire - and German military engineers are credited with improvising the earliest concertina coils on the battlefield. They spun the barbed wire into circles and simply spread it on the battlefield. Without using any support infrastructure like poles etc. this was more effective against the infantry charge by Allied soldiers. The fence erected by India along the Line of Control to keep out terrorist infiltrators consists of rows of concertina wire coils held by iron angles. They are now commonly seen and are used to secure private properties as well.

96. **What is the main theme of the above passage?**

- (a) How barbed wire was patented
- (b) The use of barbed wire in Jammu and Kashmir
- (c) The use of barbed wire in agriculture
- (d) The evolution and use of barbed wire

97. **Who is credited with creating the modern barbed wire?**

- (a) Louise Francoise Janin (b) Joseph F Glidden
- (c) Lucien B Smith (d) Richard Newton

98. **What was the initial purpose of inventing the barbed wire?**

- (a) to secure the borders of a country
- (b) to keep the dogs and boys out of gardens
- (c) to restrict the movement of trouble makers
- (d) to confine cattle and sheep within an area

99. **Who first spread the barbed wires on the field without using the poles or any other support system?**

- (a) German military engineers (b) British army
- (c) American military (d) Allied soldiers

100. **Which statement is NOT true according to the passage?**

- (a) The fence along the Indian Line of Control consists of rows of concertina wire coils held by iron angles.
- (b) In the United States, the first patent was registered by Louis François Janin.
- (c) It was Richard Newton, an Englishman, who invented the barbed wire around 1845.
- (d) Barbed wire was first put to military use in the Siege of Santiago in 1898 during the Spanish-American War.

SCIENCE

101. The decomposers are not included in the food chain. The correct reason for the same is because decomposers:

- (a) Act at every trophic level of the food chain
- (b) Do not breakdown organic compounds
- (c) Convert organic material to inorganic forms
- (d) Release enzymes outside their body to convert organic material to inorganic forms

102. Choose the incorrect statements from the following regarding magnetic lines of field.

- (a) the direction of magnetic field at a point is taken to be the direction in which the north pole of a magnetic compass needle points
- (b) magnetic field lines are closed curves
- (c) if magnetic field lines are parallel and equidistant, they represent zero field strength
- (d) relative strength of magnetic field is shown by the degree of closeness of the field lines.

103. In an electrical circuit two resistors of 2 Ω and 4 Ω respectively are connected in series to a 6 V battery. The heat dissipated by the 4 Ω resistor in 5 s will be

- (a) 5 J (b) 10 J (c) 20 J (d) 30 J

104. Sunlight is passed through a transparent medium having very fine particles These particles scatter light. Which among the given components of light undergoes more scattering?

- (a) red (b) orange (c) yellow (d) blue

105. A student conducts an activity using a flask of height 15 cm and a concave mirror. He finds that the image formed is 45 cm in height. What is the magnification of the image?

- (a) 45 times (b) 1/ 45 times (c) 1/ 3 times (d) 3 times

106. Which of the following determines the sex of a child?

- (a) The length of the mother's pregnancy
(b) The length of time between ovulation and copulation
(c) The presence of an X chromosome in an ovum
(d) The presence of a Y chromosome in a sperm

107. When an animal is cut into pieces and each piece grows into a complex organism. What is the process?

- (a) Budding (b) Fragmentation (c) Spore formation (d) Regeneration

108. Which is the correct sequence of the components of a reflex arc?

- (a) Receptors → Muscles → Sensory neuron → Motor neuron → Spinal cord
(b) Receptors → Motor neuron → Spinal cord → Sensory neuron → Muscle
(c) Receptors → Spinal cord → Sensory neuron → Motor neuron → Muscle
(d) Receptors → Sensory neuron → Spinal cord → Motor neuron → Muscle

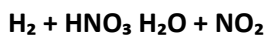
109. Chyme is ____.

- (a) Digestive enzyme secreted by stomach.
(b) Hormone secreted by islets of Pancreas
(c) food which enters into the intestine from the stomach.
(d) Part of bile juice which stores in gall bladder

110. The hetero atoms present in $\text{CH}_3\text{-CH}_2\text{-O-CH}_2\text{-CH}_2\text{-Cl}$ are

- (i) oxygen (ii) carbon (iii) hydrogen (iv) chlorine
(a) (i) and (ii)
(b) (ii) and (iii)
(c) (iii) and (iv)
(d) (i) and (iv)

111. The chemical reaction between a piece of copper and nitric acid is given by the chemical equations,



What can be inferred from the chemical equation?

- (a) Copper causes the oxidation of HNO_3 to form NO_2 .
(b) Hydrogen gas gets oxidized by HNO_3 to form water.
(c) gas reacts with oxygen in the air to form water.
(d) Nitrate reacts with hydrogen to form NO_2 and H_2O .

112. Which of the following is the correct arrangement of the given metals in ascending order of their reactivity?

Zinc, Iron, Magnesium, Sodium

- (a) Zinc > Iron > Magnesium > Sodium
(b) Sodium > Magnesium > Iron > Zinc
(c) Sodium > Zinc > Magnesium > Iron
(d) Sodium > Magnesium > Zinc > Iron

113. When you clean a metal vessel with tamarind the reaction taking place is:

Metal oxide + X → Salt + Water. What is X here?

- (a) Acid (b) Base
(c) Hydrogen (d) Carbon dioxide

114. Zinc reacts with silver nitrate to form which compounds?

- (a) $\text{Zn}(\text{NO}_3)_2 + \text{Ag}$ (b) $\text{ZnNO}_3 + \text{Ag}$
(c) $\text{AgNO}_3 + \text{Zn}(\text{NO}_3)_2$ (d) $\text{Ag} + \text{Zn}(\text{NO}_3)_3$

115. Lime water is

- (a) CaO (b) $\text{Ca}(\text{OH})_2$ (c) CaCO_3 (d) CaCl_2

116. Two appliances of rating 200 watt-250 volts and 100 watt-250 volts are joined in series to a 250 volts supply.

Total power consumed in the circuit is

- (a) 46 watt (b) 67 watt (c) 10 watt (d) 30 watt

117. Which of the following pairs of reactants will go undergo a displacement reaction?

- (a) $\text{CuSO}_4 + \text{Fe}$ (b) $\text{ZnSO}_4 + \text{Fe}$ (c) $\text{MgSO}_4 + \text{Fe}$ (d) $\text{Ca}(\text{SO}_4)_2 + \text{Fe}$

118. Which of the following determines the direction of magnetic field due to a current carrying conductor?

- (a) Faraday's laws of electromagnetic induction (b) Fleming's left-hand rule
(c) Lenz's rule (d) Maxwell's cork screw rule

119. Electronic configuration of Al^{+3} is

- (a) 2, 8, 3 (b) 2, 8, 8 (c) 2, 8 (d) 2, 8, 8, 3

120. In which of the following vertebrate group/groups, heart does not pump oxygenated blood to different parts of the body?

- (a) Pisces and amphibians (b) Amphibians and reptiles
(c) Amphibians only (d) Pisces only

121. When Ag is exposed to air it gets a black coating of

- (a) AgNO_3 (b) Ag_2S (c) Ag_2O (d) Ag_2CO_3

122. Which of the following is the full form of CFC?

- (a) Chlorofluorine carbon (b) Carbonchlorofluorine
(c) Chlorinfluid carbon (d) Chlorofluorocarbon

123. The by product of soap is

- (a) isoprene (b) glycerol (c) butane (d) ethylene glycol

124. The two oviducts in a human female unite into an elastic bag like structure known as

- (a) Vagina (b) Uterus (c) Fallopian tube (d) Cervix

125. Convex lens focus a real, point sized image at focus, the object is placed

- (a) at focus (b) between F and $2f$ (c) at infinity (d) at $2f$

SOCIAL SCIENCE

126. Which of the following organisations lays stress on liberalisation of foreign trade and foreign investment?

- (a) International Labour Organisation (b) International Monetary Fund
(c) World Health Organisation (d) World Trade Organisation

127. GDP stands for Gross Domestic Product. What does it show? Pick up the correct statement given below:

- (a) It shows how big is the economy of a country in a given year in terms of its total
(b) It shows what the total product of a country in a given year without counting the country's total resources.
(c) It shows the number of people involved in production in a particular year.
(d) It shows the total value of trade transactions of a country in a particular year.

128. Choose one correct statement from the following:

Underemployment occurs —

- (a) when people are not willing to work.
(b) when people are working slowly.
(c) when people are working less than what they are capable of doing.
(d) when people are not paid for their jobs.

129. Which one of the following is not a base for preparation of Human Development Index (HDI)

- (a) Literacy rate (b) Life expectancy
(c) Industrialization (d) Per capita income

130. Which of the following is an outcome of democratic rights?

- (a) Censorship of the media (b) Surveillance of citizens
(c) Protection from discrimination (d) Strict control of political parties

131. Which is not a constitutional body _____?

- (a) Deputy Prime Minister (b) Attorney General
(c) Speaker of Lok Sabha (d) Governor

132. Which leaders worked for the elimination of caste system in India?

- (a) Jyotiba Phule, Dr. B.R. Ambedkar, Mahatma Gandhi and Periyar Ramaswami Naicker
(b) Raja Ram Mohun Roy, Dr. B.R. Ambedkar and Mahatma Gandhi

(c) Jyotiba Phule, Periyar Ramaswami Naicker and Mahatma Gandhi

(d) Swami Vivekanand, Jyotiba Phule and Raja Ram Mohan Roy

133. Who has special power in administering the Union Territories in India?

(a) Central Government (b) Chief Minister (c) President (d) Governor

134. Which language is dominantly spoken in Belgium?

(a) Dutch (b) Spanish (c) France (d) Italian

135. Total length of coastline of India

(a) 7,516.6 km (b) 7,566.6 km (c) 7,561.6 km (d) 7,565.6 km

136. The first Jute mill was set up in

(a) Hyderabad (b) Bengaluru (c) Kolkata (d) Mumbai

137. Minerals are deposited and accumulated in the strata of which of the following rocks ?

(a) Sedimentary rocks (b) Metamorphic rocks

(c) Igneous rocks (d) None of these

138. Which is the ideal condition for the growth of sugarcane?

(a) Temperature of 21 to 27 degrees Celsius and an annual rainfall between 75cm and 100cm

(b) Temperature below 17 degree Celsius and 50to 75 CM of rainfall.

(c) Temperature of 25 degree Celsius and 200cm of rainfall.

(d) None of the above

139. Which of the following multipurpose projects is found in the Sutlej-Beas River basin?

(a) Hirakud Project (b) Damodar Valley Corporation

(c) Bhakra Nangal Project (d) Rihand Project

140. In which year the Indian Wildlife protection Act was implemented?

(a) 1970 (b) 1971 (c) 1972 (d) 1974

141. Land which is left uncultivated for more than 5 agricultural years is known as _____.

(a) Culturable waste land (b) Barren land (c) Pastures (d) Fallow Lands

142. Which one of the following began to edit the 'Bengal Gazette' a weekly magazine?

(a) James Augustus Hickey (b) George Eliot (c) Jane Austen (d) William Bolts

143. The expansion of railways helped in expansion of which of the following industries?

(a) Cotton and Metal (b) Iron and steel (c) Mining (d) Wooden

144. Who formed the 'Swaraj Party' within the Congress?

(a) Jawahar Lai Nehru and Motilal Nehru (b) Abdul Ghaffar Khan and Mahatma Gandhi

(c) Jawahar Lal Nehru and Subhas Chandra Bose (d) C.R. Das and Motilal Nehru

145. Which one of the following Viceroy announced a vague offer of dominion status for India in October 1929?

(a) Lord Mountbatten (b) Lord Dalhousie (c) Lord Irwin (d) None of these

146. When did Mahatma Gandhi reach in Dandi to violate the salt law?

(a) On 5th April 1930 (b) On 6th April 1930 (c) On 6th May 1930 (d) On 7th April 1930

147. The Ottoman Empire was ruled by the emperor of

(a) Turkey (b) Russia (c) Britain (d) Prussia

148. Under the presidency of Jawahar Lal Nehru, the Lahore Congress Session of 1929 formalised the demand of

(a) abolition of Salt Tax (b) 'Purna Swaraj' or complete independence

(c) boycott of Simon Commission (d) separate electorate for the 'Dalits'

149. Which one of the following types of government was functioning in France before the revolution of 1789?

(a) Dictatorship (b) Military (c) Body of French Citizen (d) Monarchy

150. The first International Earth Summit was held in

(a) Geneva (b) New York (c) Japan (d) Rio de Janeiro