STATE LEVEL NATIONAL TALENT SEARCH EXAMINATION, 2017
MENTAL ABILITY AND SCHOLASTIC APTITUDE TEST
For Class X

Part – I
MENTAL ABILITY TEST

Questions 1-5 : Complete the Series

1.   FLP, INS, LPV, ?
(1) UHG   (2) ORY   (3) RPO   (4) PSX

2.   D-4, F-6, H-8, J-10, ?
(1) M-14   (2) K-13   (3) L-12   (4) S-21

3.   AB, BA, ABD, DBA, PQRS, ?
(1) SRQP   (2) OYRB   (3) RPOS   (4) SXRG

4.   25, 49, 89, 145, 217, ?
(1) 305   (2) 327   (3) 309   (4) 303

5.   0, 2, 2, 3, 3, 5, 8, 4, 10, (?), 5, 17
(1) 6   (2) 7   (3) 9   (4) 15

Questions 6-10 : There are Eight persons E, F, G, H, I, J, K and L are seated around a square table – two on each side. There are three lady members and they are not seated next to each other. J is between L and F. G is between I and F. H, a lady member is second to the left of J. L, a male number, is seated opposite of E, a lady member. There is lady member between F and I.

6.   Who among the following is seated between E and H?
(1) F   (2) I   (3) J   (4) None of these

7.   How many persons are seated between K and F?
(1) One   (2) Two   (3) Thee   (4) cannot to determined

8.   Who among the following are the three lady members?
(1) E, G and J   (2) E, H and G   (3) G, H and J   (4) cannot to determined

9.   Who among the following is to the immediate left of F?
(1) G   (2) I   (3) J   (4) cannot to determined

10.   Which of the following is true about J?
(1) J is a male member   (2) J is a female member
(3) Sex of J cannot be determined   (4) Position of J cannot be determined
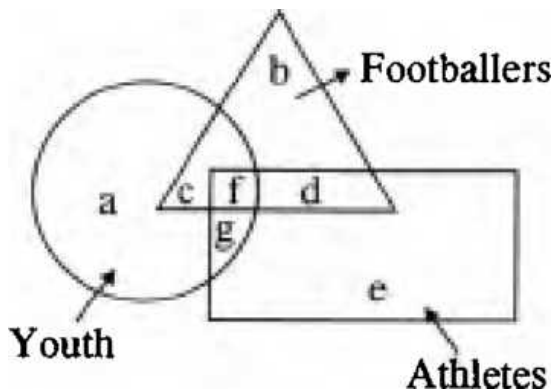
11.   Find the letter to be placed in '?' of the figure given.

3	4		9	6
5	L		S	4
7	P		?	2
1	8		8	3
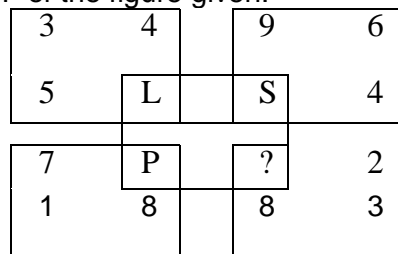
(1) Q   (2) N   (3) M   (4) R

12. In the figure, the circle represents youth, the triangle represents footballers and the rectangle represents athletes.

Which letter(s) represent(s) athletes among youths who are not footballers?

(1) g   (2) g and c   (3) f   (4) f and d

13. Identify the number corresponding to X the '?'.

(1) 8   (2) 5   (3) 7   (4) 3

14. Amongst five friends, Lata, Alka, Rani, Asha and Sadhana, Lata is older than only three of her friends. Alka is younger to Asha and Lata. Rani is older than only Sadhana. Who amongst them is the eldest ?
(1) Alka   (2) Lata   (3) Asha   (4) Sadhana

15. Which of the following diagram/sets indicate the relation between women, mothers and parents?
(1)   (2)   (3)   (4)

16. Mother was asked how many gifts she had in the bag. She replied that there were all dolls but six, all cars but six, and all books but six. How many gifts had she in all ?
(1) 9   (2) 18   (3) 27   (4) 36

17. In a certain code, MONKEY is written as XDJMNL. How is TIGER written in that code ?
(1) QDFHS   (2) SDFHS   (3) SHFDQ   (4) UJHFS

18. If x means +, - means x, – means + and + means –, then
$(3 – 15 \div 19) \times 8 + 6 = ?$
(1) 8   (2) 4   (3) 2   (4) – 1

Question 19-20 : Answer the questions based on the following information.

Six men R, S, T, U, V and W sat around circular table playing cards. It was noticed that no two men, the initial letters of whose names are adjacent in the alphabetical order, sat next to each other. U was opposite of R. V was not to the immediate right of R.

19.   Who sat to the immediate left of R ?
        (1) S   (2) T   (3) V   (4) W

20.   Who sat to the immediate right of R ?
        (1) S   (2) T   (3) V   (4) W

21.   I am facing South. I turn right and walk 20 m. Then I turn rigtht again and walk 10 m. Then I turn left
        and walk 10 m and then turning right walk 20 m. Then I turn right again and walk 60 m. In which
        direction am I from the starting point ?
        (1) North   (2) Northwest   (3) East   (4) Northwest

22.   A walks 10 metres towards East and then 10 meters to his right. Then every time turning to his left,
        he walks 5, 15 and 15 meters respectively. How far is he now from his starting point?
        (1) 5 meters   (2) 10 meters   (3) 15 meters   (4) 20 meters

Question 23-27 : In these questions pair of words/letters/numbers to the left/right of : : have certain
relationship with each other. You are required to select the correct alternative so that similar relationship is
established to the right/left of : :

23.   MANTEL : NAMLET : : VANITY : ?
        (1) NAVYIT   (2) NAVYTI   (3) NAVIYI   (4) AVNTIY

24.   5 : 18 : : ?
        (1) 30 : 96   (2) 21 : 66   (3) 19 : 61   (4) 11 : 35

25.   Heart : Blood : : Lung : ?
        (1) Oxygen   (2) Chest   (3) Purification   (4) Air

26.   APOC : ? : : ITSK : MVUN
        (1) DRQH   (2) ERQF   (3) EQRG   (4) DQRH

27.   Engineer : Machine : : ?
        (1) Doctor : Disease   (2) Doctor : Medicine
        (3) Doctor : Hospital   (4) Doctor : Body

28.   Choose the cube from the options that will unfold to give the figure given below
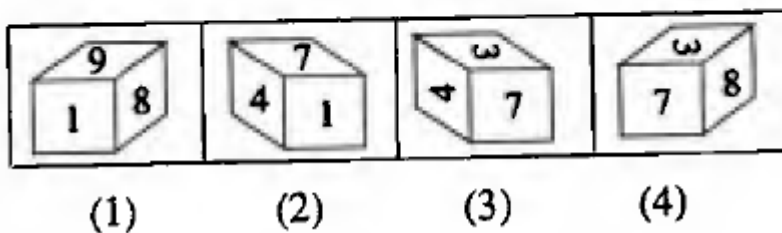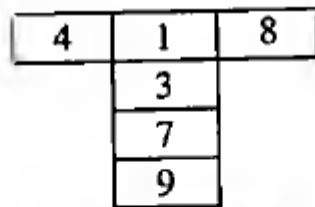
29.   How many triangles are there in the figure below ?
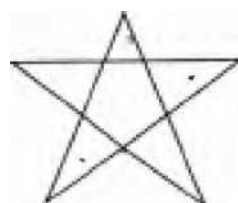
        (1) 5   (2) 6   (3) 8   (4) 10

30. In the given question choose the correct mirror image from amongst the four alternatives.
50JA32DE06

(1) 80ſVƐƧDEO9 (2) 80ſV3ƧDEOℓ
(3) 80ſV3ƧDEOℓ (4) 80ſV3ƧDEOℓ

31. Find out the correct image in place of question mark (?) from the given alternatives.

(1)

(2)

(3)

(4)
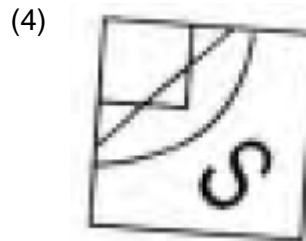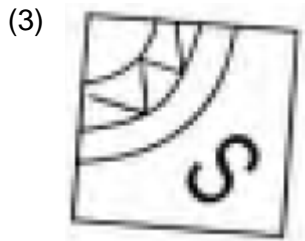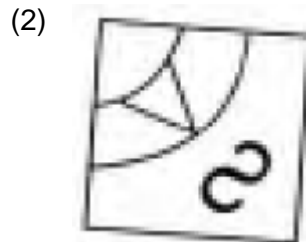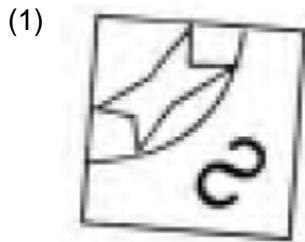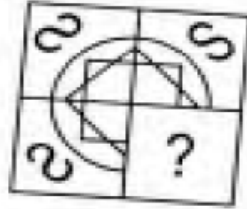
Question 32-35 : Study the following figure carefully and answer the questions:

The triangle represents doctors. The circle represents players and the rectangle represents artists.
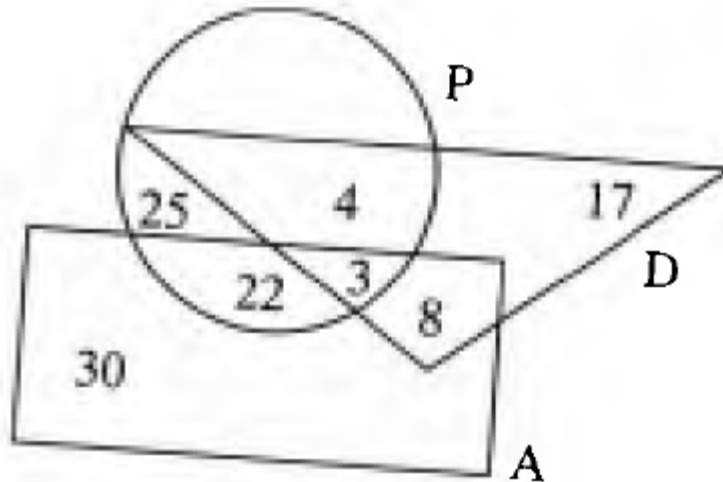
32. How many doctors are both players and artists ?
(1) 6   (2) 8   (3) 4   (4) 3

33. How many artists are players ?
(1) 30   (2) 29   (3) 25   (4) 17

34. How many artists are neither players nor doctors ?
(1) 29   (2) 30   (3) 22   (4) 8

35. How many doctors are neither players nor artists ?
(1) 17   (2) 30   (3) 8   (4) 19

36. If HOME = 2541, SHOP = 8256, WORK = 9573, then code for SMOKE will be
    (1) 85431   (2) 84531   (3) 83451   (4) 84351

37. Six students are sitting in a row. K is sitting between V and R. V is sitting next to M. M is sitting next to B, who is sitting on the extreme left and Q is sitting next to R. Who are sitting adjacent to V ?
    (1) R and Q   (2) B and M   (3) K and R   (4) M and K

38. Six person A, B, C, D, E and F are standing in a circle. B is between F and A is between E and D, F is to the left of D. Who is between A and F ?
    (1) B   (2) C   (3) D   (4) E

39. What will be the number of Hexagonals in the given figure ?
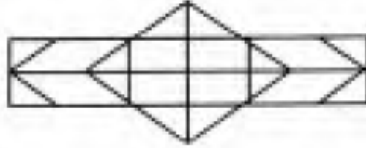
    (1) 2   (2) 4   (3) 5   (4) 6

40. abb _ _ _ _ ab _ _ b _ _ bba _ _ a
    (1) bbbab   (2) babba   (3) abaab   (4) Bbabb

41. A person took a loan of Rs 1500 from his employer for 3 months at 12% per annum simple interest. The amount he has to return is
    (1) Rs 45   (2) Rs 1500   (3) Rs 1545   (4) Rs 1455

42. A wholesaler allows a discount of 20% on the list price to a retailer. The retailer sells at 8% discount on the list price. The profit percent of the retailer is
    (1) 20%   (2) 15%   (3) 12%   (4) 8%

43. A man purchased a bundle of cloth, with a list price of Rs 20000, and a sales tax of 10% on it. He paid Rs. 25000 to the shopkeeper. The money he got back was :
    (1) Rs 22000   (2) Rs 15000   (3) Rs 3000   (4) Rs 2000

44. A can complete a piece of work in 12 days and B is 60% more efficient than A. In how many days B will complete the same work?
    (1) 5 Days   (2) 7.5 Days   (3) 6 Days   (4) 8 Days

45. A, B & C can complete a piece of work in 6, 12 and 24 days, respectively, Working together, they will complete the same work in
    (1) 1/24 Days   (2) 7/24 Days   (3) 3/7 Days   (4) 4 Days

46. Find the next number in the sequence 0, 2, 24, 252, _____
    (1) 620   (2) 1040   (3) 3120   (4) 5430

47. A, B, C, D and E are sitting   on a bench A is sitting next to B, C is sitting next to D is not sitting next to E, who is sitting on the left end of the bench. C is on the second position from the F. A is to the right of B and E. Counting from the left, in which position is A sitting?
    (1) 2   (2) 3   (3) 5   (4) 6

48. The average age of three persons is years. Their ages are in the proportion of 1:3:5.What is the age in years of the youngest one among them.
    (1) 10   (2) 12   (3) 9   (4) 8

49. 13 sheeps and 9 pigs were bought for Rs. 1291.85.If the average price of a sheep be Rs. 74. What is the average price of a pig.
    (1) 34.65   (2) 48.40   (3) 52.85   (4) 36.65

50. What is the sum of the first 25 natural odd numbers?
    (1) 225   (2) 425   (3) 625   (4) 525

English

Question 1-5 : Read the passage given below and answer the questions that follow.

Alexander Pope was a great English Poet. He belonged to the Augustan Age of English Poetry. He wrote classical poems. He loved to live in solitude. His purpose of life was unique. He hated sociability and friendship. Nothing could give him pleasure than his feeling of independence in respect of the fulfilment of his basic needs. To him, a truly happy man is he who does not have to depend on others for anything. Such a man gets food from the piece of land he inherited, milk from his own herds and fire and shade from his own trees. He enjoys the company of solitude only. He gets plenty of time for work and rest. The poet wanted to live unseen and unknown. He also desired to pass away from the world unnoticed and unlamented.

1.   Alexander Pope was :
      (1) a great Greek poet   (2) a great French poet
      (3) a great English poet   (4) a great Urdu poet

2.   He belonged to :
      (1) The Elizabethan Age   (2) The Romantic Age
      (3) The Victorian Age   (4) The Augustan Age

3.   He loved to live :
      (1) in crowd   (2) at workplace
      (3) in solitude   (4) at playground

4.   He hated :
      (1) dishonesty   (2) violence
      (3) sociability   (4) dirty places

5.   Pass away means
      (1) go off   (2) reject.
      (3) die   (4) take no notice

Question 6–10 : Read the passage given below and answer the questions that follow.

Once there lived a rich merchant in Baghdad. He had two servants. They were hard - working. So, the merchant liked them very much. One fine morning the merchant opened his safe and found his gold necklace missing. He enquired of the servants about the gold necklace. They denied and expressed their ignorance about it. The merchant was not satisfied and took them to the quazi and put the matter before him. The quazi was a very wise and sensible man. He thought of a plan to find out the thief. He told them, "Look I am giving you both a bamboo stick. They are of equal size. Take them and bring them back tomorrow. The thief's stick will grow two inches in length in the night. At home, one of the servants cut off the bamboo stick by two inches thinking that by tomorrow the stick would be of the same size.The next morning both the servants appeared before the quazi. One of the servants' stick was found shorter. The quazi caught hold of the servant and declared that he was the thief.

6.   The merchant had:
      (1) three servants   (2) two servants
      (3) four servants   (4) several servants

7.   The quazi was a very :
      (1) wise man   (2) foolish man
      (3) wicked man   (4) cunning man

8. the necklace was made of:
    (1) silver   (2) platinum
    (3) gold   (4) copper

9. The merchant took the servants to :
    (1) the police station   (2) the court
    (3) the quazi   (4) the sarpanch

10. One servant cut off the stick by :
    (1) one inch   (2) three inches
    (3) two inches   (4) four inches

Question 11-12: The following five sentences come from a paragraph. The first and the last sentences are given. Choose the order in which the three sentences P, Q and R should appear to complete the paragraph.

11. **S1** Gold glitters and attracts every one
    S2………………………………………………………….
    S3………………………………………………………….
    S4………………………………………………………….
    S5 So, all that glitters is not gold
    P. Similarly, there are persons who appear as gentlemen, but really they are ignoble persons, active in anti-social activities.
    Q. Brass also glitters, but is not gold
    R. Thus in many cases appearances are deceptive
    Choose fro he options given below:
    (1) PQR   (2) QRP
    (3) RPQ   (4) QPR

12. Si Discipline is a training of the mind and character to produce self-control and habits of obedience.
    S2………………………………………………………….
    S3………………………………………………………….
    S4………………………………………………………….
    S5 If there is no discipline, there will be disorder and anarchy everywhee.
    P. It is essential in every walk of life.
    Q. Without it a person cannot develop his personality.
    R. Whether it is a class-room, or sports, it is inevitable.
    Choose from the options given :
    (1) PQR   (2) QRP
    (3) PRQ   (4) RQP

Question 13-22 : Choose the word which best fills the blank in the sentences from the four options given :

13. Bread is made in………………….
    (1) a factory   (2) a brewery
    (3) a bakery   (4) a printing press

14. Soldiers live in………………..
    (1) a prison   (2) a cottage
    (3) barracks   (4) a palace

15. One who gives message **is** called :
    (1) a commander   (2) a messenger
    (3) a soldier   (4) a peon

16. The tool with   a heavy metal head is called:
    (1) an axe   (2) a hammer
    (3) a saw   (4) a zax

17. The art of shooting with bows and arrows is called:
    (1) warfare
    (2) tournament
    (3) archery
    (4) fencing

18. The place of burial is called:
    (1) graveyard
    (2) courtyard
    (3) gallery
    (4) dockyard

19. Honey is derived from:
    (A) honey comb
    (2) flies
    (3) butterfly
    (4) creature

20. A person who looks at the dark side of life is called :
    (1) an optimist
    (2) an artist
    (3) a poet
    (4) a pessimist

21. A book is printed in:
    (1) a press
    (2) a hospital
    (3) a library
    (4) a school

22. A person who writes verses is called :
    (1) a writer
    (2) a singer
    (3) a poet
    (4) a player

Question 23–25 : Select the meaning of the given phrases/idioms :

23. Black and white
    (1) in black colour
    (2) clear
    (3) written
    (4) short

24. By leaps and bounds
    (1) shortly
    (2) immediately
    (3) speedily
    (4) slowly

25. Fair and square :
    (1) quickly
    (2) honestly
    (3) beautifully
    (4) boldly

Question 26-30 : In the following passage there are some blanks with numbers. Fill in the blanks by selecting the most appropriate word to each blank from given options of each number.

When winter comes, can 26 be far behind ? Similarly, if there is misery in life, hapiness will be in the air. So, don't be 27 in your 28 days. Clouds of 29 will scatter and there will be 30 in your life.

26. (1) summer
    (2) autumn
    (3) spring
    (4) rainy season

27. (1) lazy
    (2) furious
    (3) discouraged
    (4) pessimist

28. (1) happy
    (2) hasty
    (3) dark
    (4) bright

29. (1) rains
    (2) anxiety
    (3) darkness
    (4) brightness

30. (1) normalacy
    (2) peace
    (3) satisfaction
    (4) sunshine

Question 31-35 : Select the word which means the opposite of the given word :

31. Light
    (1) bleak
    (2) darkness
    (3) cloudy
    (4) foggy

32. Friend:
    (1) rival
    (2) opponent
    (3) enemy
    (4) assistant

33. Optimism:
    (1) hope
    (2) dream
    (3) Pessimism
    (4) wisdom

34. Clean:
    (1) small
    (2) new
    (3) costly
    (4) dirty

35. Fat:
    (1) ill
    (2) short
    (3) thin
    (4) old

Question 36-40 : Select the word which means nearly the same as the given word :

36. Rich:
    (1) brave
    (2) wealthy
    (3) learned
    (4) beautiful

37. Shining:
    (1) happy
    (2) bright
    (3) red
    (4) angry

38. Terror:
    (1) war
    (2) noise
    (3) horror
    (4) crime

39. Theme :
    (1) song
    (2) poem
    (3) subject-matter
    (4) object

40. Retreat :
    (1) behaviour
    (2) thought
    (3) withdraw
    (4) cry

Question 41 to 45 : Fill in the blanks with right form of comparatives :

41. He is………………..than I
    (1) most tall
    (2) taller
    (3) tallest
    (4) tall

42. You are ………………than your brother
    (1) handsome
    (2) handsomer
    (3) more handsome
    (4) most handsome

43. Tom is……………….to John in service
    (1) more junior
    (2) juniorer
    (3) junior
    (4) most junior

44.   English is……………..than any other European language
(1) more rich   (2) most rich
(3) never   (4) richer

45.   Mt Everest is the……………..peak of the world
(1) high   (2) higher
(3) most highest   (4) highest

Question 46-50 : Fill in the blanks with suitable Modals:

46.   We……………..love our country
(1) can   (2) will
(3) ought to   (4) shall

47.   It……………….rain today
(1) Will   (2) would
(3) may   (4) could

48.   ……………..I come in sir ?
(1) should   (2) might
(3) may   (4) can

49.   Every creature………….. die
(1) should   (2) can
(3) must   (4) ought to

50.   We…………………take care of our parents.
(1) will   (2) shall
(3) should   (4) might

(A) SCIENCE DISCIPLINE

Physics

1. A metallic conductor carries 800 mA current from left to right. It means that
    (1) 5×10^{18} protons are flowing per sec from left to right
    (2) 5×10^{18} electrons are flowing per sec from right to left
    (3) 8×10^2 electrons are flowing per sec from right to left.
    (4) 5×10^{18} protons are flowing per sec from left to right & 5×10^{18} electrons are flowing per sec from right to left.

2. Ohm's law (I - V/R) is applicable for
    (1) All types of conductors of electricity
    (2) Only metallic conductors of electricity
    (3) Only semi conductors of electricity
    (4) Only from metallic and ionic conductors of electricity

3. A copper wire has a resistance of 8 ohm. The wire is stretched to double of its original length. Its new resistance will be
    (1) 8 ohm   (2) 16 ohm   (3) 32 ohm   (4) 64 ohm

4. A beam of light traveling in air enters into a liquid. Its speed reduces by 30%. The refractive index of liquid with respect to air is
    (1) 10/7   (2) 10/3   (3) 7/5   (4) 4/3

5. The refractive index of a liquid is 5/3. A ray of light traveling in this liquid falls at interface of liquid & air. At what angle of incidence should it fall on liquid air interface so that it suffers total internal reflection?
    (1) 53º   (2) 24º   (3) 15º   (4) 17º

6. A beam of light in air is incident upon the smooth plane surface of a piece of flint glass making an angle of 30° with its plane. If the reflected beam and refracted beam are perpendicular to each other, what is the index of refraction of flint glass with respect to air ?

    (1) 1/2   (2) $\dfrac{\sqrt{3}}{2}$ (3) $\dfrac{2}{\sqrt{3}}$ (4) $\sqrt{3}$

7. The image created by a converging lens is projected on a screen that is 60 cm away from the lens. If the height of the image is one fourth the height of the object, what is focal length of the lens?
    (1) 36 cm   (2) 45 cm   (3) 80 cm   (4) 48 cm

8. An electric bulb is marked (60 W, 120 V). What is the resistance of filament of bulb?
    (1) 2Ω (2) 30Ω (3) 240Ω (4) 720Ω

9. A battery whose emf is 40 V has an internal resistance 5 Q. If this battery is connected across a 15 Q resistor (R) what will be voltage drop across resistor (R)?
    (1) 10 V   (2) 30 V   (3) 40 V   (4) 50 V

10. Three identical bulbs B1, B2 & B3 are connected in parallel across terminals of an ideal source of emf. What will happen if bulb B2 burns out ?
    (1) Bulb B_1 & B_3 will also burn out   (2) Bulb B_1 and B_3 will give less
    (3) Bulb B_1 & B_2 will give more light   (4) Bulb B_1 & B_1 will give same light

11. A bar magnet is cut into two equal parts by cutting it very slowly perpendicular to its length. Which of the following is true ?
(1) Each part will be a bar magnet having two equal and opposite poles same as original magnet.
(2) One part will have a N-Pole and other part will have a S-Pole of same strength as original magnet.
(3) Each part will be a bar magnet having two equal and opposite poles of strength half of original magnet.
(4) None of two parts will be a magnet.

12. Which of the following cannot form a real image for a divergent beam of light ?
(1) Plane mirror only.   (2) Convex mirror only
(3) Concave lens only   (4) All of above

13. Three resistors of resistance $\frac{1}{60}\Omega, \frac{1}{30}\Omega$ & $\frac{1}{20}\Omega$ are joined in parallel. The equivalent resistance of combination will be

(1) $\frac{1}{110}\Omega$ (2) $\frac{1}{10}\Omega$ (3) 110Ω (4) 10Ω

Chemistry

14. The spectrum of He^+ is expected to be similar to that of
(1) H   (2) Li   (3) Na   (4) He

15. Which of the following oxoacids of phosphorus is used in the preparation of Graham's salt?
(1) H_3PO_3 (2) $H_4P_2O_7$ (3) HPO_3 (4) $H_2P_2O_5$

16. In the reaction
$Cr_2O_7^{2-} + 14H^+ + 6e \rightarrow 2Cr^3 + 7H_2O$
The equivalent weight of $K_2Cr_2O_7$ in acidic medium will be
(1) M/3   (2) M/9   (3) M/12   (4) M/6

17. For the reaction $A_2 + 2B \rightarrow 2AB$, the following data were collected.

[A]	[B]	Rate (mol L^{-1} s^{-1})
0.1	0.01	1.5×10^{-3}
0.1	0.04	6.0×10^{-3}
0.2	0.01	3.0×10^{-3}

The total order of the reaction is
(1) 1   (2) 2   (3) 3   (4) 4

18. The correct relationship between the free-energy change in a reaction and the corresponding equilibrium constant K_c is
(1) $\Delta G = RT \ln K_c$ (2) $-\Delta G = RT \ln K_c$
(3) $\Delta G^\circ = RT \ln K_p$ (4) $-\Delta G^\circ = RT \ln K_p$

19. The general expression for the solubility product of A_xB_y will be
(1) $K_{sp} = x^2y^2S^{xy}$ (2) $K_{sp} = (xy)^{x+y}S^{x+y}$ (3) $K_{sp} = (x^xy^y)S^{x+y}$ (4) $K_{sp} = x^yy^xS^{x+y}$

20. In a galvanic cell
(1) Electrical energy is converted into chemical energy
(2) Chemical energy is converted into electrical energy
(3) The anode is the negative and the cathode is the positive
(4) Redox reaction does not occur automatically

21. The chemical formula of borax is
(1) $Na_2B_4O_7.10H_2O$
(2) $Na_2B_4O_7.18H_2O$
(3) $Na_2B_4O_7.4H_2O$
(4) $Na_2B_4O_7.6H_2O$

22. Match the List- I and List- II and select the correct answer using the code given below the Lists.
List I
Conversion
I. NaCl to Na
II. NaCl to Na_2SO_4
III. NaCl to NaOH
IV. Na_2SO_3 to $Na_2S_2O_3$
List II
Name of Process
(i) Castner-Kellner Process
(ii) Spring Reaction
(iii) Down Process
(iv) H_2SO_4
Which of the following is correctly matched?
(1) I-iii, II- iv, III-i, IV-ii
(2) I-iv, II-ii, III-i, IV-iii
(3) I-i, II-ii, III-iii, IV-iv
(4) I-ii, II-iii, III-iv, IV-i

23. NaOH reacts with CO at 200°C and 5 atmospheric pressure to give
(1) CH_3CH_2COONa
(2) C_6H_5COONa
(3) HCOONa
(4) CH_3COONa

24. The general electronic configuration of the transition elements is
(1) $(n-1)d^{10}(n+1)s^2$
(2) $(n-1)d^{1-10}(n+1)s^{1-2}$
(3) $(n-1)d^{1-10}np^6ns^2$
(4) $(n-1)d^{1-10}ns^{0-2}$

25. Which of the following is the strongest acid?
(1) $F_2CHCOOH$
(2) $ClCH_2COOH$
(3) FCH_2COOH
(4) $Cl_2CHCOOH$

26. Nitrobenzene can be prepared by heating benzene with a mixture, concentrated HNO_3 and concentrated H_2SO_4. In this nitrating mixture, HNO acts as
(1) A base   (2) An acid   (3) A catalyst   (4) A reducing agent

Biology

27. Match the items in column I with those in column 11 and Select the correct choice

	Column I		Column II
A	Autotrophic	I	Kidney
B	Conducting tissue	II	Protein
C	Excretary organ	III	Green Plants
D	Pepsin	IV	Xylem

(1) A-III, B- IV, C-II, D-I
(2) A-III. B- IV, C-II, D- II
(3) A-IV, B-II, C-I, D- III
(4) A- II, B- IV, C- III, D-I

28. Which one of the following is insectivorous plant?
(1) Drosera   (2) Nepenthes   (3) Both (1) and (2)   (4) Hydrilla

29. In human blood group AB
(1) Antibodies are present
(2) Antibodies are absent
(3) Antibody a is present
(4) Antibody b is present

30. Honey is made by
(1) Male honey bee
(2) Queen honey bee
(3) Worker honey bee
(4) Both (1) and (2)

31. In Mendel's Monohybrid cross, the F_2 phenotypic ratio is
(1) 3 : 1
(2) 1 : 2 : 1
(3) 2 : 1
(4) 1 : 3 : 1

32. Sexually transmitted disease is
(1) Measles
(2) T.B
(3) Gonorrhoea
(4) Typhoid

33. In ecosystem the flow of energy is
(1) Unidirectional
(2) Bidirectional
(3) Multidirectional
(4) All of these

34. Regulation of Spermatogenesis is done by
(1) Oestrogen
(2) L.H
(3) Androgen
(4) None of these

35. Which of the following is renewable resource?
(1) Solar energy
(2) Air
(3) Petroleum
(4) Water

36. Which Vitamin is present in Golden nee?
(1) Vitamin A
(2) Vitamin B_{12}
(3) Vitamin C
(4) Vitamin D

37. Aril is edible in which of the following fruit?
(1) Annona
(2) Myristica
(3) Litchi
(4) All of these

38. Semen is frozen in
(1) Liquid nitrogen
(2) Refrigerator
(3) Ice
(4) All of these

39. Diploid is
(1) Ovum
(2) Polleu
(3) Both (1) and (2)
(4) Zygote

40. T- lymphocytes originate from
(1) Bone marrow
(2) Stomach
(3) Thymus
(4) Liver

(B) Mathematics

41. The wheel of a motor car makes 1000 revolutions in moving 440 m. The diameter of the wheel is
    (1) 0.44 m   (2) 0.14 m   (3) 0.24 m   (4) 0.34 m

42. The value of $\dfrac{(0.03)^2 - (0.01)^2}{0.03 - 0.01}$ is
    (1) 0.02   (2) 0.004   (3) 0.4   (4) 0.04

43. If the sum of two numbers is 22 and sum of their squares is 404 then the product of the number is
    (1) 40   (2) 44   (3) 80   (4) 88

44. How many seconds will a 500m long train take to cross a man, walking with a speed of 3 km/h, in the direction of the moving train if the speed of the train is 63 km/h?
    (1) 25 sec   (2) 30 sec   (3) 40 sec   (4) 45 sec

45. The area (in sq. cm) of the largest circle that can be drawn inside a square of side 28 cm is
    (1) 17248   (2) 784   (3) 8624   (4) 616

46. If the cost price of 12 pens is equal to the selling price of 8 pens, the gain percent is
    (1) $33\dfrac{1}{3}\%$ (2) $66\dfrac{2}{3}\%$ (3) 25%   (4) 50%

47. What is the least number which when divided by 42, 72 and 84 leaves the remainder 25, 55 and 67 respectively ?
    (1) 521   (2) 512   (3) 504   (4) 487

48. The missing term in the sequence 0, 3, 8, 15, 24, …., 48 is
    (1) 35   (2) 30   (3) 36   (4) 39

49. The compound interest on Rupees 1000 in 2 year at 4% per annum, the interest being compounded half yearly is
    (1) Rs 6360.80   (2) Rs 824.32   (3) Rs 912.86   (4) Rs 828.82

50. If 70% of the students in a school are boys and the number of girls be 504, the number of boys is
    (1) 1176   (2) 1008   (3) 1208   (4) 3024

51. The mess charges for 35 students for 24 days is Rs 6300. In how many days will the mess charge be Rs 3375 for 25 students
    (1) 12   (2) 15   (3) 18   (4) 21

52. If the volume of two cubes are in the ratio 27:64, then the ratio of their total surface area is
    (1) 27 : 64   (2) 3 : 4   (3) 9 : 16   (4) 3 : 8

53. If $1^3 + 2^3 + ….. + 10^3 = 3025$ then $4 + 32 + 108 + … + 4000$ is equal to
    (1) 1200   (2) 12100   (3) 12200   (4) 12400

54. What is the square root of $9 + 2\sqrt{14}$?
    (1) $1 + 2\sqrt{2}$ (2) $\sqrt{3} + \sqrt{6}$ (3) $\sqrt{2} + \sqrt{7}$ (4) $\sqrt{2} + \sqrt{5}$

55. 7 Oranges are bought for Rs 3 .At what rate per hundred must be sold to gain 33%
    (1) Rs 56   (2) Rs 60   (3) Rs 58   (4) Rs 57

56. $\sqrt[3]{1 - \dfrac{127}{343}}$ is equal to
    (1) $\dfrac{5}{9}$ (2) $1 - \dfrac{1}{7}$ (3) $\dfrac{4}{7}$ (4) $1 - \dfrac{2}{7}$

57. Two numbers are in the ratio 3: 4 . If 5 is subtracted from each .then the ratio will be 2:3 . What is the smallest number ?
(1) 15   (2) 18   (3) 20   (4) 24

58. The present age difference between father and son is 14 years. The ratio of their age will be 4:3 after 11 years. How old is son now?
(1) 25 yrs   (2) 31 yrs   (3) 30 yrs   (4) 28 yrs

59. If the side of a square is increased by 25% then, how much precent does its area gets increased
(1) 56.25%   (2) 50%   (3) 12.5%   (4) 156.25%

60. What is the value of $2.\overline{6} - 1.\overline{9}$?
(1) $0.\overline{6}$ (2) $0.\overline{9}$ (3) $0.\overline{7}$ (4) 0.7

(C) SOCIAL STUDIES AND HUMANITIES

History

61. Brazil was discovered in –
(1) 1500   (2) 1505
(3) 1510   (4) 1515

62. Magna Carta or The Great Charter was signed in
(1) 1210   (2) 1215
(3) 1220   (4) 1225

63. Habeas Corpus Act was passed in?
(1) 1679   (2) 1683
(3) 1691   (4) 1697

64. "Boston Tea Party" incident happened in ?
(1) 1770   (2) 1771
(3) 1772   (4) 1773

65. America was discovered in?
(1) 1491   (2) 1492
(3) 1493   (4) 1494

66. Who is known as "Father of History" ?
(1) Mark Antony   (2) Nero
(3) Herodotus   (4) Homer

67. What is the name of autobiography of Adolf Hitler ?
(1) First Attack   (2) Mein Kampf
(3) My Spirit   (4) Ray of Hope

68. The Parliament of Great Britain was formed in the year?
(1) 1705   (2) 1706
(3) 1707   (4) 1708

69. The first news paper in the world was started by?
(1) Japan   (2) China
(3) USA   (4) India

70. In which year, first census was conducted in India?
(1) 1884   (2) 1872
(3) 1881   (4) 1856

71. Who was elected the President of Indian National Congress in the Surat Session 1907 famous for Surat Split?
(1) Dr. Rash Bihari Ghosh   (2) Lala Lajpat Rai
(3) Dadabhai Naoroji   (4) Pherozeshah Mehta

72. Who among the following was the first Indian Woman President to chair the Indian National Congress at Kanpur session of 1925 ?
(1) Sarojini Naidu   (2) Annie Beasant
(3) Nellie Sengupta   (4) Indira Gandhi

Geography

73. Cotton is an important agro-based industrial raw material. Which row of states is most important in the production of this raw material?
    (1) Gujarat, Uttar Pradesh, Bihar
    (2) Maharastra, Tamilnadu, Punjab
    (3) Tamilnadu, Kerala, Goa
    (4) Karnataka, Odisha, Jharkhand

74. Which row of states has been important for the production of pulses in India?
    (1) Kerala, Bihar, Jharkhand
    (2) Bihar, Uttar Pradesh, West Bengal
    (3) Rajasthan, Madhya Pradesh, Uttar Pradesh
    (4) Uttar Pradesh, Assam, Orissa

75. Select the correct statement:
    (1) Damodar Valley Multipurpose River Valley Project has increased the flood frequency in West Bengal
    (2) River Damodar directly goes to the Bay of Bengal
    (3) Damodar Valley multipurpose river valley project benefits the states of West Bengal and Jharkhand
    (4) River Subernrekha is a tributary of river Damodar

76. Assertion (A) : Most of the coal of India are reserved in Chattisgarh, Jharkhand and Odisha.
    Reason (R) : Coal reserves occur in sedimentary rocks.
    (1) Both A and R are true and R explains A
    (2) Both A and R are true but R does not explain A
    (3) A is true but R is false
    (4) A is false but R is true

77. Nanda Devi biosphere is situated in the state of :
    (1) Nagaland
    (2) Arunachal Pradesh
    (3) Tripura
    (4) Uttarakhand

78. Barh Super Thermal Power station is situated in the state of :
    (1) Bihar
    (2) Andhra Pradesh
    (3) Rajasthan
    (4) Punjab

79. India is the largest producer of :
    (1) Wheat
    (2) Maize
    (3) Rice
    (4) Milk

80. Sugar Mills of Bihar are principally situated in the districts of:
    (1) Patna and Nalanda
    (2) Munger and Gaya
    (3) West Champaran and East Champaran
    (4) Katihar and Purnea

81. Which row of the given table is correct?

	Major Port	State
(1)	Kandala	Maharastra
(2)	Mangalore	Karnataka
(3)	Marrnagao	Kerala
(4)	Haldia	Odisha

82. Which state of India is famous for Jute textile industry?
    (1) Tripura
    (2) Assam
    (3) Bihar
    (4) West Bengal

83. Select the correct statement :
    (1) Contour lines connect the spots of equal height
    (2) Contour lines help in measuring the height of mountain peak
    (3) Contour lines help in understanding the Ocean Currents
    (4) Contour lines help in understanding the nature of rock structure.

84. Which places were first connected by railways in India?
    (1) Kolkata to Patna   (2) Chennai to Rameshwaram
    (3) Mumbai to Thane   (4) Mumbai to Pune

Civics

85. In the reference of Right to Information 2005, which of the following institution and its highest information official is not correctly matched?
    Institution
    (1) Supreme Court
    (2) Union Public Service Commission
    (3) Lok Sabha
    (4) State's High Court
    Competent Official
    (1) The Chief Justice of India
    (2) The Chairman, Union Public Service Commission
    (3) The Speaker, Lok Sabha
    (4) The Chief Justice of High Court

86. To which article of the Indian constitution is the verdict of S. R. Bommai versus Union of India related?
    (1) Article – 2   (2) Article – 32
    (3) Article – 353   (4) Article – 356

87. In the constitution of India the provision related to which of following is not clearly mentioned?
    (1) Inter State Council   (2) All India Service
    (3) The Contingency Fund of India   (4) National Development Council

88. Which of the following does recognize the political parties in India?
    (1) The Speaker of the Lok Sabha   (2) The President
    (3) The Election Commission   (4) The Supreme Court

89. What is a pressure group?
    (1) A group struggling for power
    (2) A group struggling for fulfilling its own interest
    (3) Political Party
    (4) Private group

90. Of the following what are the main functions of a political party
    (i) Role of Opposition
    (ii) To Contest election for getting power
    (iii) Development of political awareness among the people
    (iv) formation of the government
    (1) (i) and (ii)   (2) (ii) and (iii)   (3) (ii)   (4) All of the above

91. What is the objective of Panchayati Raj System?
    (i) Decentralization of Power
    (ii) Local participation in the government system
    (iii) Undemocratization of system
    (iv) Unitary government
    (1) (i) and(iii)   (2) (1) and (ii)   (3) (iii) and (iv)   (4) All the above

92. Which of the following factors does affect the voting behavior of voters in India?
    (i) Caste   (ii) Religion   (iii) Constitution   (iv) Region
    (1) (i) and(iv)   (2) (i) and (ii)   (3) (i), (ii) and (iv)   (4) All the above

Economics

93. Which of the following is correct?
    a. I.S.I. standard is used tor standardization of agricultural products
    b. Right to information bill was passed in India in November 2005
    c. Human protection act was passed in India in 1993
    d. Consumer protection act was passed in 1986
    (1) All of the above   (2) Only option a and option b
    (3) Option a, b and c   (4) Option c and d

94. The Clay used by a potter is which type of capital
    (1) Fixed capital   (2) Working capital
    (3) Human capital   (4) All of the above

95. Which of the following is not considered as a social indication of poverty
    (1) Less number of means of transport   (2) Illiteracy Level
    (3) Lack of access to health care   (4) Lack of job opportunity

96. The best index to measure Economic development is :-
    (1) State Income   (2) Per capita income
    (3) Political stability   (4) None of the above

97. When did the cooperatives begin in India?
    (1) 1901   (2) 1904
    (3) 1912   (4) 1915

98. Which sector contributes the highest in Bihar's income
    (1) Agricultural sector   (2) Industrial sector
    (3) Service sector   (4) None of the above

99. A commodity which is used to denote anything which is widely accepted in payment of goods or in discharge of other business obligation" who gave this definition?
    (1) Marshal   (2) Crowther
    (3) Coulborn   (4) Robertson

100. Removing barrier or restrictions set by the government is called
    (1) Liberalisation   (2) Investment
    (3) Favourable trade   (4) Free trade