



# 1ST ALL INDIA BRAIN LEAGUE EXAM 2026

Class -X

**Time: 60 Minutes**

**M.M =50**

## General Instructions:

1. The duration of the examination is 60 minutes. Question paper contains 50 questions with maximum 50 marks
2. There will be negative marking in Phase - II, i.e.  $\frac{1}{4}$  mark will be deducted for each incorrect answer.
3. Use of gadgets is not allowed.
4. Students must abide by the instructions issued during the examination by the invigilator or the centre incharge.
5. Before attempting the question paper ensure that it contains all pages & no question is missing
6. Immediately fill the particulars on this page of the test booklet and OMR with BLACK ballpoint pen only. Use of pencil is strictly prohibited.
7. Fill and darken the bubbles completely. Do not put a tick or a cross.
8. Half-filled or over-filled bubbles will not be read by the software & liable to be rejected.

Correct Method



Student's Signature

Wrong Method



Invigilators's Signature

**SPECIAL CLASSES FOR-** IIT-JEE, NEET, CS ENTRANCE EXAM, CA FOUNDATION, NDA, CLAT & OLYMPIADS

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## ENGLISH

1. Someone should have informed the authorities about the incident earlier. Choose the correct passive form.  
(a) The authorities should have been informed about the incident earlier.  
(b) The authorities should be informed about the incident earlier.  
(c) The authorities have been informed about the incident earlier.  
(d) The authorities were informed about the incident earlier.
2. A speech delivered without any prior preparation:  
(a) Rehearsed  
(b) Extempore  
(c) Oration  
(d) Manuscript
3. Choose the correct option that does not fit. \_\_\_\_\_ of the two candidates has the required experience.  
(a) Both  
(b) Either  
(c) Neither  
(d) Many
4. You \_ submit the application before the deadline to be considered.  
(a) can  
(b) might  
(c) may  
(d) would
5. The wind whispered secrets through the trees. Choose the correct figure of speech.  
(a) Oxymoron  
(b) Simile  
(c) Personification  
(d) Metaphor
6. Look! The children \_ in the rain.  
(a) play  
(b) played  
(c) are playing  
(d) have played
7. Ten kilometres \_ a long distance to walk.  
(a) are  
(b) have been  
(c) were  
(d) is
8. The committee avoided discussing the real issue and continued to beat about the bush. The idiom implies:  
(a) Speaking harshly  
(b) Speaking irrelevantly  
(c) Avoiding the main point  
(d) Talking nervously
9. Despite repeated failures, he continued to invest money, refusing to accept defeat. Identify the idiom that best fits the sentence:  
(a) Barking up the wrong tree  
(b) Casting pearls before swine  
(c) Beating a dead horse  
(d) Sitting on the fence
10. 10. Neither of the two answers \_\_\_\_\_ correct.

- (a) are
- (b) were
- (c) is
- (d) have been

## PHYSICS

11. Two electric kettles, A and B, are connected to the same power supply (constant voltage). You are given the following observations:

- I. Kettle A brings a fixed volume of water to a boil faster than Kettle B.
- II. The heating coils in both kettles are made of the same material and have the same length.
- III. Kettle A has a thicker heating coil than Kettle B.

Based on these observations, which of the following statements is scientifically correct?

- A. Kettle A has a lower electrical resistance because its coil is thicker.
- B. Kettle B has a higher resistivity because its coil is thinner.
- C. Kettle B draws a larger current from the supply because it has a smaller cross-sectional area.
- D. Kettle B produces more heat per second than Kettle A.

12. A hypermetropic person and a person with normal vision observe an object using the same magnifying glass. The object and the lens are kept at fixed positions. Which of the following statements is correct?

- A. The hypermetropic person sees a larger but blurred image.
- B. The normal vision person sees a larger image due to better accommodation.
- C. Both persons see images of the same linear size, but the hypermetropic person may see it blurred.
- D. The hypermetropic person sees a smaller image due to a larger near point.

13. Two resistors X and Y (with  $X \neq Y$ ) are connected to the same ideal battery of EMF  $V$  in two different arrangements:

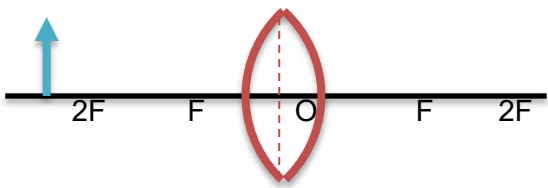
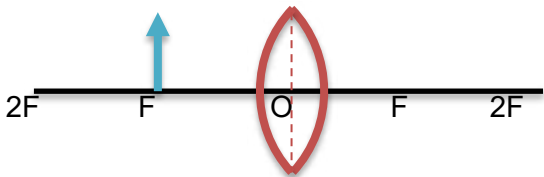
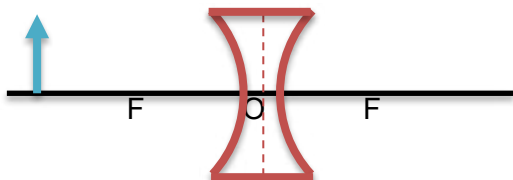
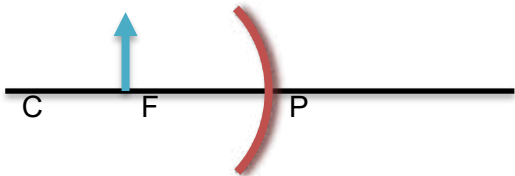
- Case I: X and Y connected in series
  - Case II: X and Y connected in parallel
- Assume connecting wires have negligible resistance and the battery has no internal resistance.

Which of the following statements is correct?

- A. The current through each resistor is greater in the series combination than in the parallel combination.
- B. The potential difference across resistor X is the same in both series and parallel combinations.
- C. The total electrical energy converted into heat in a given time is greater in the parallel combination than in the series combination.
- D. The ratio of equivalent resistance of series combination to parallel combination

$$\text{is } \frac{R_{\text{Series}}}{R_{\text{Parallel}}} = \frac{1}{XY}$$

14. Match the column

Column I		Column II	
	1	Real Image formed	
	2	Inverted Image formed	
	3	Magnified Image formed	
	4	Diminished Image formed	
	5	Virtual Image formed	
	6	Same size of image formed as object	
	7	Erect Image Formed	

- A. P- 1, 2, 4 Q- 3, 5, 7 R- 4, 6, 7 S- 1, 2, 7  
 B. P- 1, 2, 6 Q- 3, 6, 7 R- 4, 5, 7 S- 1, 2, 3,  
 C. P- 2, 5, 7 Q- 1, 3, 5 R- 4, 5, 7 S- 1, 4, 5,  
 D. P- 1, 2, 4 Q- 3, 5, 7 R- 4, 5, 7 S- 1, 2, 3

15. A long solenoid is connected to a DC source and carries a steady current. The solenoid is placed horizontally on a table. A student performs the following changes one at a time, keeping all other factors unchanged.

**Changes are made:**

- I. The current through the solenoid is doubled.
- II. The solenoid is compressed so that its length becomes half, but the total number of turns remains the same.
- III. The solenoid is rotated through  $180^\circ$  about its axis without changing the current direction.

Which of the following correctly describes the effect on the magnetic field inside the solenoid?

- A. Magnitude increases in I and II; direction changes in III
- B. Magnitude increases only in I; remains same in II; direction reverses in III
- C. Magnitude increases in I and II; direction remains unchanged in III
- D. Magnitude remains same in all cases; direction changes only in II

### CHEMISTRY

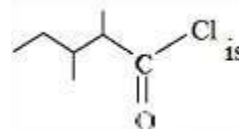
16. 10 g of hydrogen and 64 g of oxygen were filled in a steel vessel and exploded. Amount of water produced in this reaction will be:
- A) 1 mol
  - B) 2 mol
  - C) 3 mol
  - D) 4 mol
17. 600 mL of 0.01M HCl is mixed with 400 mL of 0.01 M  $\text{H}_2\text{SO}_4$ . The pH of the mixture is  $\text{_____} \times 10^{-2}$ . (Nearest integer)  
[Given  $\log 2 = 0.30$ ,  $\log 3 = 0.48$ ,  $\log 5 = 0.69$ ,  $\log 7 = 0.84$ ,  $\log 11 = 1.04$ ]
- A) 186
  - B) 200
  - C) 290

D) 310

18. An element X is a yellow coloured solid, insoluble in water but soluble in carbon disulphide. It has a melting point of about  $114.5^\circ\text{C}$  and a boiling point of about  $445^\circ\text{C}$ . It burns in air with a pale blue flame to form a pungent-smelling colourless gas Y, which turns moist blue litmus paper red and finally colourless. In the above situation, X and Y respectively are:

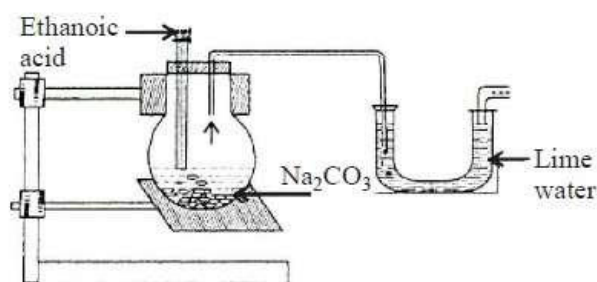
- A) Sodium and sodium oxide
- B) Carbon and carbon monoxide
- C) Sulphur and sulphur dioxide
- D) Phosphorus and phosphorus pentoxide

19. The IUPAC name of



- A) 1-chloro-1-oxo-2,3-dimethylpentane
- B) 2-ethyl-3-methylbutanoyl chloride
- C) 2,3-dimethylpentanoyl chloride
- D) 3,4-dimethylpentanoyl chloride

20. Observe the following experimental set up :



From this experimental set up which type of compound will react with lime water and what will remain in round bottom flask :

- A)  $\text{CO}_2$  and  $\text{CH}_3\text{COOH}$
- B)  $\text{H}_2$  and  $\text{CH}_3\text{COONa}$
- C)  $\text{CO}_2$  and  $\text{CH}_3\text{COONa}$
- D)  $\text{H}_2\text{O}$  and  $\text{CH}_3\text{COONa}$

## BIOLOGY

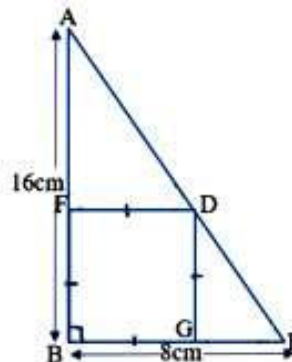
21. Which hormone controls the movement of water and sodium ions into and out of the nephron?"  
(a) ADH (b) hPL  
(c) GnRH (d) LH
22. Which of the following part of brain is centre for body temperature?  
(a) Medulla  
(b) Hypothalamus  
(c) cerebellum  
(d) cerebrum
23. Identify the incorrect statement.  
(a) self pollination increase susceptibility to disease  
(b) Pollen grains are non-matile  
(c) The zygote undergoes repeated meiotic division to form embryo  
(d) Both (b) and(c)
24. A rose plant obtained from self cross of heterozygous red flower has produced 200 flowers. How many of them would be heterozygous red flowers  
(a) 25  
(b) 50  
(c) 100  
(d) 150
25. Vinita suddenly sees a tiger. Her heart beat goes up and blood pressure increases. which hormone is released at this time in her body?  
(a) Adrenaline  
(b) Thyroxine  
(c) Cortisol  
(d) insulin

## MATHEMATICS

26. Consider the sets  $T_n = \{n, n+1, n+2, n+3, n+4\}$ , where  $n = 1, 2, 3, \dots, 96$ . How many of these sets contain 6 or any integral multiple thereof (i.e. any one of the numbers 6, 12, 18,...)?  
(a) 80  
(b) 81  
(c) 82  
(d) 83
27. If  $\tan^2\theta = 1 - a^2$  then the value of  $\sec\theta + \tan^3\theta \operatorname{cosec}\theta$  is:  
(a)  $(2-a^2)$   
(b)  $(2-a^2)^{1/2}$   
(c)  $(2-a^2)^{2/3}$   
(d)  $(2-a^2)^{3/2}$
28. What is the value of  $p(2)$  if the value of a quadratic polynomial  $p(x)$  is 0 only at  $x = -1$  and  $p(-2) = 2$ ?  
(a) 12 (b) 18  
(c) 6 (d) 20
29. If the least Prime factor of  $a$  is 5 and the least Prime factor of  $b$  is 13 then what is the least Prime factor of  $a + b$ ?  
(a) 3 (b) 5  
(c) 2 (d) 10
30. The area of the triangle formed by the lines  $y = x$ ,  $x = 6$  and  $y = 0$  is:  
(a) 36 sq. units  
(b) 18 sq. units  
(c) 9 sq. units  
(d) 72 sq. units
31. If the zeroes of a quadratic polynomial of the form  $ax^2 + bx + c = 0$  are additive inverse of each other then it  
(a) has no linear term and the constant term is positive  
(b) has no linear term and the constant term is negative  
(c) can have linear term but the constant term is positive  
(d) can have linear term but the constant term is negative
32. After the declaration of the board results, the marks obtained by the students in a particular section are recorded in a grouped frequency table. The maximum number of students are found to be in the range of (70-80) marks. If the number of students in the ranges before and after the (70-80) range are same, what is the mode of the data?  
(a) 70 Marks (b) 75 Marks  
(c) 80 Marks (d) Data Insufficient

33. The number of real roots of the equation  $x^2 - 3|x| + 2 = 0$  is  
 (a) 3 (b) 4  
 (c) 2 (d) 1
34. If  $n$  is a natural number then  $9^{2n} - 4^{2n}$  is always divisible by  
 (a) 5  
 (b) 13  
 (c) both 5 and 13  
 (d) none of these
35. A hemispherical bowl of internal diameter 36 cm contains liquid. This liquid is filled into 72 cylindrical bottles of diameter 6 cm. Find the height of each bottle, if 10% liquid is wasted in this transfer.  
 (a) 2.5 cm (b) 5 cm  
 (c) 5.4 cm (d) 6.0 cm.
36. A circle is inscribed in a given square and another circle is circumscribed about the square.  
 What is the ratio of the area of the inscribed circle to that of the circumscribed circle?  
 (a) 2 : 3 (b) 3 : 4  
 (c) 1 : 4 (d) 1 : 2
37. The mean of  $n$  observations is  $X$  if the first term is increased by 1, second by 2 and so on, then the new mean is  
 (a)  $X + n$   
 (b)  $X + \frac{n}{2}$   
 (c)  $X + \frac{n+1}{2}$   
 (d) none of these
38. Find the number of terms in an AP, if the sum of these terms is 710 and first and last terms are 7 and 64 respectively.  
 (a) 19 (b) 20  
 (c) 18 (d) 10
39. What will be the sum of roots of the equation  $4^x - 3(2^{x+3}) + 128 = 0$ .  
 (a) 23 (b) 5  
 (c) 0 (d) 7

40. Sides AB and BE of a right triangle, right angled at B are of lengths 16 cm and 8 cm respectively. The length of the largest square FDGB that can be inscribed in the triangle ABE is:



- (a)  $32/3$  cm (b)  $16/3$  cm  
 (c)  $8/3$  cm (d)  $4/3$  cm

### SOCIAL STUDIES

41. Read the source given below and answer the question that follows:  
 "The First World War, Khilafat and Non-Cooperation Movement created an atmosphere of nationalism in India. People from different walks of life united in a common struggle."  
 Which of the following was NOT a reason for the growth of nationalism after World War I?  
 A. Increase in defence expenditure  
 B. Forced recruitment in villages  
 C. High custom duties on foreign goods  
 D. Price rise and economic hardship
42. Arrange the following events in the correct chronological order:  
 1. Greek War of Independence  
 2. Congress of Vienna  
 3. Frankfurt Parliament  
 4. Italian Unification  
 A.  $2 \rightarrow 1 \rightarrow 3 \rightarrow 4$   
 B.  $1 \rightarrow 2 \rightarrow 3 \rightarrow 4$   
 C.  $2 \rightarrow 3 \rightarrow 1 \rightarrow 4$   
 D.  $3 \rightarrow 2 \rightarrow 1 \rightarrow 4$



43. “Gandhiji believed that mass production should be replaced by production by the masses.”  
Which resource-use principle is reflected in this idea?  
A. Intensive resource extraction  
B. Sustainable development  
C. Resource nationalism  
D. Capital-intensive growth
44. If India’s iron ore reserves were suddenly depleted, which industry would be MOST affected FIRST?  
A. Cement  
B. Aluminium  
C. Steel  
D. Fertiliser
45. “Manufacturing industries account for less than 20% of GDP in India.”  
What does this MOST strongly indicate?  
A. Overdependence on foreign goods  
B. Need for industrialisation to strengthen the economy  
C. Failure of agriculture  
D. Excessive urbanisation
46. Belgium adopted a unique power-sharing arrangement to resolve ethnic tensions. Which feature BEST reflects community government?  
A. Equal number of ministers from Dutch and French communities  
B. State governments with constitutional powers  
C. A separate government elected by language groups  
D. Central government controlling all policies
47. Which reform would MOST effectively reduce the problem of money and muscle power in politics?  
A. Increasing election expenditure limits  
B. State funding of elections  
C. Reducing the number of political parties  
D. Banning opposition parties
48. Which situation would MOST LIKELY weaken federalism in India?  
A. Coalition governments at the Centre  
B. Strengthening of Panchayati Raj institutions  
C. Frequent imposition of President’s Rule  
D. Greater financial autonomy to states
49. A Self-Help Group (SHG) provides loans to its members using pooled savings. The interest charged is lower than moneylenders but slightly higher than banks.  
Which advantage of SHGs is MOST clearly reflected?  
A. Complete elimination of interest  
B. Collateral-free credit access  
C. Government subsidy  
D. Profit maximisation
50. Two countries have the same average income. Country A has very high income inequality, while Country B has relatively equal income distribution.  
Which country is likely to have a higher level of development?  
A. Country A  
B. Country B  
C. Both are equally developed  
D. Cannot be determined



## ANSWER KEY

### ENGLISH

1. (a)
2. (b)
3. (b)
4. (c)
5. (c)
6. (c)
7. (d)
8. (c)
9. (c)
10. (c)

### PHYSICS

11. A
12. C
13. C
14. D
15. C

### CHEMISTRY

16. D
17. A
18. C
19. C
20. C

### BIOLOGY

21. a
22. a
23. c
24. c
25. a

### MATHEMATICS

26. a) 80
27. d)  $(2-a^2)^{3/2}$
28. b) 18
29. c) 2
30. b) 18 sq. units
31. b) has no linear term and the constant term is negative
32. b) 75 marks
33. b) 4
34. c) both 5 and 13
35. c) 5.4 cm
36. d) 1 : 2
37. c)  $X + (n+1)/2$
38. b) 20
39. d) 7
40. b)  $16/3$

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## **SOCIAL STUDIES**

- 41. C. High custom duties on foreign goods
- 42. A.  $2 \rightarrow 1 \rightarrow 3 \rightarrow 4$
- 43. B. Sustainable development
- 44. C. Steel
- 45. B. Need for industrialisation to strengthen the economy
- 46. C. A separate government elected by language groups
- 47. B. State funding of elections
- 48. C. Frequent imposition of President's Rule
- 49. B. Collateral-free credit access
- 50. B. Country B