



SAMPLE PAPER

GRADE– 10th

SECTION – A (English)

1. Choose the correctly spelled word meaning 'absolutely necessary'.
(A) Indispensible (B) Indispensable (C) Endispensable (D) Inndispensable
2. Fill in the blank with the modal that shows a strong past deduction.
'The lock is broken; someone _____ forced their way in.'
(A) must have (B) should have (C) could have (D) might have
3. What is the correct question tag for this suggestion?
'Let's review the strategic maneuvers, _____?'
(A) don't we (B) shall we (C) won't we (D) should we
4. What do we call 'a person who is indifferent to pleasure or pain'?
(A) Stoic (B) Ascetic (C) Cynic (D) Epicurean
5. What literary device is used in the saying:
'The pen is mightier than the sword'?
(A) Metonymy (B) Synecdoche (C) Oxymoron (D) Hyperbole
6. Choose the correct phrasal verb.
'The commander ordered the troops to _____ the counter – attack until the artillery was ready.'
(A) hold up (B) hold out (C) hold off (D) hold down
7. Identify the structure of this sentence.
'Not only did he secure the perimeter, but he also rescued the hostages.'
(A) Simple (B) Compound (C) Complex (D) Compound – Complex
8. Fill in the blank with the correct determiner.
'_____ knowledge is a dangerous thing.'
(A) A little (B) Little (C) The little (D) Few
9. Which sentence has the correct subject – verb agreement?
(A) The commander, accompanied by his troops, are advancing.
(B) A number of recruits has failed the obstacle course.
(C) The number of casualties is significantly lower this year.
(D) Neither of the plans are viable.
10. What does it mean 'to cross the Rubicon'?
(A) To make a careless mistake (B) To take an irreversible step
(C) To cross a dangerous river safely (D) To negotiate a peace treaty.

SECTION – B (General Knowledge)

11. Consider the following statements about the Himalayan ranges:

- 1. The Himadri is the northernmost and highest Himalayan range.**
- 2. The Himachal consists mainly of ranges such as Pir Panjal and Dhauladhar.**
- 3. The Shiwaliks are composed largely of unconsolidated sediments.**

Which of the above statements are correct?

- (A) 1 and 2 only (B) 2 and 3 only (C) 1 and 3 only (D) 1, 2 and 3

12. Which geographical feature acts as a major climatic barrier between the Indian subcontinent and Central Asia?

- (A) Aravalli Range (B) Western Ghats (C) Himalayas (D) Eastern Ghats

13. Consider the following pairs:

- 1. Chambal – Yamuna 2. Son – Ganga 3. Tawa – Narmada 4. Gomti – Yamuna**

Which pairs are correctly matched?

- (A) 1, 2 and 3 only (B) 1 and 4 only (C) 2 and 3 only (D) 1, 2, 3 and 4

14. Which of the following is not a tributary of the Yamuna?

- (A) Chambal (B) Betwa (C) Ken (D) Son

15. Which river forms the Dhuandhar Falls?

- (A) Tapi (B) Narmada (C) Mahanadi (D) Godavari

16. Which feature of the Indian Constitution most directly reflects the principle of constitutional supremacy?

- (A) Parliamentary sovereignty (B) Judicial review
(C) Universal adult franchise (D) Collective responsibility

17. Consider the following statements about the India Constitution:

- 1. It establishes a federal system with a strong unitary bias.**
- 2. It provides for an independent judiciary.**
- 3. It makes India a theocratic state.**

Which of the above is/are correct?

- (A) 1 and 2 only (B) 2 and 3 only (C) 1 and 3 only (D) 1, 2 and 3

18. Which factor most directly contributed to the financial crisis of France before the French Revolution?

- (A) Decline of agriculture alone (B) Costly wars and an inefficient tax system
(C) Industrial Revolution (D) Abolition of feudalism

19. The Estates – General of 1789 was convened primarily to:

- (A) Draft a new constitution (B) Declare war on Austria
(C) Address France's financial crisis (D) Abolish the monarchy

20. The term "Dual Power" in 1917 Russia referred primarily to the coexistence of:

- (A) Tsar and Duma (B) Provisional Government and Soviets
(C) Bolsheviks and Mensheviks (D) Army and Communist party

SECTION – C (General Science)

- 21. In an experimental setup analysing photosynthesis, a plant is exposed to carbon dioxide containing the oxygen isotope ^{18}O (C^{18}O_2), while the water provided contains normal oxygen ($\text{H}_2\ ^{16}\text{O}$). What will be the isotopic composition of the oxygen gas released into the atmosphere?**
- (A) It will consist entirely of ^{18}O
 - (B) It will consist entirely of ^{16}O
 - (C) It will be a 50:50 mixture of ^{18}O and ^{16}O
 - (D) No oxygen gas will be released under these conditions
- 22. If a patient's pancreatic duct is blocked completely by a gallstone, which of the following digestive processes will be most drastically affected in the small intestine?**
- (A) Digestion of proteins only
 - (B) Digestion of carbohydrates only
 - (C) Digestion of fats, proteins, and carbohydrates
 - (D) Emulsification of large fat globules
- 23. During vigorous physical exercise, human muscle cells experience oxygen deprivation and switch to anaerobic respiration. Which of the following pathways correctly identifies the substrate conversion leading to muscle fatigue?**
- (A) Glucose $\rightarrow$ Pyruvate $\rightarrow$ Ethanol + Carbon dioxide
 - (B) Glucose $\rightarrow$ Pyruvate $\rightarrow$ Lactic acid + Energy
 - (C) Glucose $\rightarrow$ Pyruvate $\rightarrow$ Carbon dioxide + Water
 - (D) Glucose $\rightarrow$ Lactic acid $\rightarrow$ Pyruvate + Carbon dioxide
- 24. A selective injury to the cerebellum of the human brain following an accident would most likely result in the loss of which of the following vital functions?**
- (A) Regulation of involuntary heartbeat and respiratory rate
 - (B) Processing of visual signals and auditory memory storage
 - (C) Maintenance of posture, equilibrium, and precision of voluntary movements
 - (D) Sensation of hunger, thirst, and thermoregulation control
- 25. A potted plant is kept inside a dark room near a window receiving directional sunlight. Over a few days, the stem tip bends significantly toward the light source. This phototropic movement is primarily driven by:**
- (A) Destruction of auxins on the illuminated side of the shoot apex
 - (B) High accumulation and elongation of auxins on the shaded side of the stem
 - (C) Active movement of gibberellins toward the sunlit side of the plant
 - (D) Immediate shutdown of cellular respiration in cells facing away from the light
- 26. Which of the following is a double displacement reaction as well as a precipitation reaction?**
- (A) $\text{BaCl}_2 + \text{H}_2\text{SO}_4 \rightarrow \text{BaSO}_4 + 2\text{HCl}$
 - (B) $2\text{KClO}_3 \rightarrow 2\text{KCl} + 3\text{O}_2$
 - (C) $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$
 - (D) $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$

27. Select the correct option.

Assertion (A): The aqueous solution of sodium carbonate is alkaline.

Reason (R): Sodium carbonate is a salt of a strong acid and a weak base.

- (A) Both A and R are true and R is the correct explanation of A.
- (B) Both A and R are true but R is not the correct explanation of A.
- (C) A is true but R is false.
- (D) A is false but R is true.

28. An element X reacts with dilute HCl to liberate hydrogen gas. The oxide of X dissolves in both acids and bases. X is most likely:

- (A) Copper
- (B) Zinc
- (C) Sodium
- (D) Iron

29. Which of the following compounds will give a positive test with alkaline KMnO_4 (Baeyer's reagent) and also decolourise bromine water?

- (A) $\text{CH}_3\text{--CH}_2\text{--CH}_3$
- (B) $\text{CH}_3\text{--CH=CH}_2$
- (C) $\text{CH}_3\text{--CH}_2\text{--OH}$
- (D) $\text{CH}_3\text{--COOH}$

30. An element has electronic configuration 2, 8, 7. Which of the following statements is correct about this element?

- (A) It belongs to Group 17 and Period 3; its oxide is acidic.
- (B) It belongs to Group 7 and Period 3; its oxide is basic.
- (C) It belongs to Group 17 and Period 2; its oxide is amphoteric.
- (D) It belongs to Group 1 and Period 3; its oxide is basic.

31. An object moves along a circular path of radius R. What is its displacement and distance covered after it completes exactly 2.5 revolutions?

- (A) Displacement = $2R$, Distance = $5\pi R$
- (B) Displacement = 0, Distance = $5\pi R$
- (C) Displacement = $2R$, Distance = $2.5\pi R$
- (D) Displacement = πR , Distance = $5R$

32. A bullet of mass 20 g is horizontally fired with a velocity of 150 m/s from a pistol of mass 2 kg. What is the recoil velocity of the pistol?

- (A) -1.5 m/s
- (B) -3.0 m/s
- (C) +1.5 m/s
- (D) -0.15 m/s

33. A piece of wire having a uniform resistance R is cut into five equal segments. These five segments are then connected in a parallel configuration. If the equivalent resistance of this parallel combination is R' , what is the value of the ratio R/R' ?

- (A) $1/25$
- (B) $1/5$
- (C) 5
- (D) 25

34. A cylindrical liquid column of height 'h' and fluid density ' ρ ' is kept on a horizontal base. If the area of cross-section of the cylinder is halved while keeping 'h' constant, the liquid pressure exerted at the bottom surface will:

- (A) Be halved
- (B) Be doubled
- (C) Remain unchanged
- (D) Increase four times

35. An electric bulb is rated at 220 V and 100 W. When it is operated on a reduced voltage of 110 V, what will be the electrical power consumed by its filament?

- (A) 100 W
- (B) 75 W
- (C) 50 W
- (D) 25 W

SECTION – D (Reasoning)

36. Name a single letter, which can be prefixed to the following words in order to obtain entirely new words?

TILL, TABLE, PILE, TAB, PRING

- | | |
|-------|-------|
| (A) C | (B) S |
| (C) B | (D) H |

37. Odometer : Distance :: Thermometer : ?

- | | |
|-----------------|--------------|
| (A) Heat | (B) Pressure |
| (C) Temperature | (D) Speed |

38. Find the missing term:

2, 6, 7, 21, 22, 66, ?

- | | |
|---------|---------|
| (A) 67 | (B) 132 |
| (C) 198 | (D) 68 |

39. There are five friends Shailendra, Keshav, Madhav, Ashish and Rakesh. Shailendra is shorter than Keshav but taller than Rakesh. Madhav is the tallest. Ashish is a little shorter than Keshav and little taller than Shailendra. Who is the shortest?

- | | |
|------------|----------------|
| (A) Rakesh | (B) Shailendra |
| (C) Ashish | (D) Keshav |

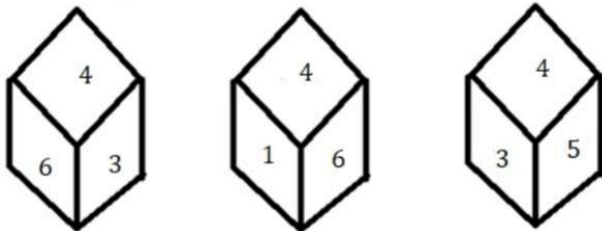
40. In a certain code language, TAPE is written as 'SUZBOQDF'. How will "MOCK" be written as in that language?

- | | |
|--------------|--------------|
| (A) MOPQDELM | (B) LNNPBDJL |
| (C) LOPQBCKL | (D) KNNPBEBL |

41. In a morning Raman was performing yoga with his head down and legs up. If at this time his face towards North then in which direction his Right hand be?

- | | |
|----------|-----------|
| (A) West | (B) North |
| (C) East | (D) South |

42. Three different positions of the same dice are shown. Find the number on the face opposite the face having '2':



- | | |
|-------|-------|
| (A) 1 | (B) 4 |
| (C) 3 | (D) 6 |

43. Select the option figure that will replace the question mark (?) in the figure given below to complete the pattern:

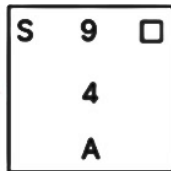
A	U	9	9	A	U	S	9	A	A	S	9	
	S			=		□		U				?
	=			S		U		□				



(A)



(B)

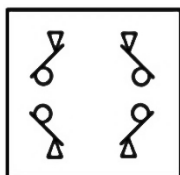
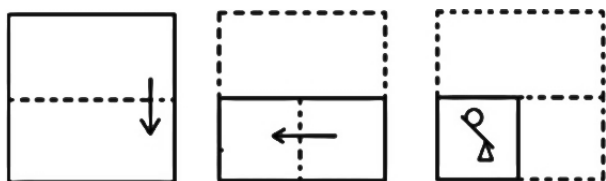


(C)

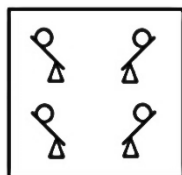


(D)

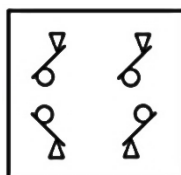
44. The sequence of folding a piece of paper and the manner in which the folded paper has been cut is shown below. Choose a figure which would most closely resemble the unfolded form of the paper:



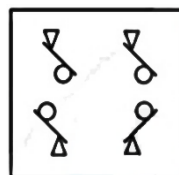
(A)



(B)

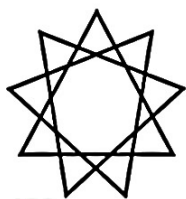


(C)



(D)

45. How many triangles are there in the given figure?



(A) 30

(B) 28

(C) 24

(D) 32

SECTION – E (Mathematics)

46. If two positive integers a and b are written as $a = x^3y^2$ and $b = xy^3$, where x, y are prime numbers, then HCF (a, b) is:
(A) xy (B) xy^2 (C) x^3y^3 (D) x^2y^2
47. The largest number which divides 70 and 125, leaving remainders 5 and 8 respectively, is:
(A) 13 (B) 65 (C) 875 (D) 1750
48. If α and β are the zeros of the quadratic polynomial $f(x) = x^2 - 5x + k$ such that $\alpha - \beta = 1$, then the value of k is:
(A) 12 (B) 6 (C) 4 (D) 1
49. If one zero of the quadratic polynomials $x^2 + 3x + k$ is 2, then the value of k is:
(A) 10 (B) -10 (C) -7 (D) -2
50. If α, β, γ are the zeros of the cubic polynomial $f(x) = ax^3 + bx^2 + cx + d$, then the value of $\alpha\beta + \beta\gamma + \gamma\alpha$ is:
(A) $-\frac{b}{a}$ (B) $\frac{c}{a}$ (C) $-\frac{d}{a}$ (D) $\frac{b}{a}$
51. For what value of k do the equations $kx - 2y = 3$ and $3x + y = 5$ represent unique intersecting lines?
(A) $k = -6$ (B) $k \neq -6$ (C) $k = 0$ (D) $k \neq 0$
52. The pair of equations $x + 2y + 5 = 0$ and $-3x - 6y + 1 = 0$ has:
(A) a unique solution (B) exactly two solutions
(C) infinitely many solutions (D) no solution
53. If the equation $x^2 + 4kx + k = 0$ has equal real roots, then the non-zero value of k is:
(A) $\frac{1}{4}$ (B) $\frac{1}{16}$ (C) 4 (D) 1
54. The roots of the quadratic equation $2x^2 - \sqrt{5}x - 2 = 0$ are:
(A) Real and distinct (B) Real and equal
(C) Non-real/Imaginary (D) Cannot be determined
55. If one root of $bx^2 + cx + a = 0$ is reciprocal of the other, then:
(A) $a = b$ (B) $b = c$ (C) $c = a$ (D) $a = c$
56. The 11th term of the Arithmetic Progression $-3, -\frac{1}{2}, 2, \dots$ is:
(A) 28 (B) 22 (C) -38 (D) -46
57. If the sum of first n terms of an A.P. is $3n^2 + 5n$, then its common difference is:
(A) 3 (B) 5 (C) 6 (D) 9
58. In $\triangle ABC$, $DE \parallel BC$ such that $AD = 3$ cm, $DB = 4$ cm, and $AE = 6$ cm. The length of EC is:
(A) 8 cm (B) 12 cm (C) 4.5 cm (D) 9 cm
59. The areas of two similar triangles are 81 cm^2 and 49 cm^2 respectively. If the altitude of the larger triangle is 4.5 cm, then the corresponding altitude of the smaller triangle is:
(A) 3.5 cm (B) 2.5 cm (C) 3.8 cm (D) 4.0 cm
60. In a right-angled triangle ABC , right-angled at B , if $AB = 6$ cm and $BC = 8$ cm, the length of the perpendicular drawn from B to AC is:
(A) 5 cm (B) 4.8 cm (C) 5.2 cm (D) 3.6 cm