

Important Notice

This sample paper is based on the half yearly Syllabus. STEPS Exam Will be on the same pattern based on the full syllabus.



PREMIER INSTITUTE
FOR
IIT - JEE | NEET | PRE - FOUNDATION

Sample Paper

Presently Studying in
Class - 10th (Med.)

SET-A

Time : 2 hr.

Date : _____

F. M : 240

IMPORTANT INSTRUCTIONS

1. Immediately fill in the particulars on this page of the Test Booklet with Blue/Black Ball Point Pen. Use of pencil is strictly prohibited.
2. The candidates should not write their Form Number anywhere else (except in the specified space) on the test booklet/Answer Sheet.
3. The test is of **2 hours** duration.
4. The test Booklet consists of **60** questions. The maximum marks are **240**.
5. The distribution of marks subject wise in each part is as below for each correct response.
Section A : IQ (60 marks) – 15 Questions.
Section B : Biology (80 marks) – 20 Questions.
Section C : Science (60 marks) – 15 Questions.
Section D : Challenger (Bio) (40 marks) – 10 Questions.
6. Students cannot use log tables and calculators or any other material in the examination hall.
7. Students must abide by the instructions issued during the examination by the invigilators or the centre in charge.
8. Before attempting the question paper, ensure that it contains all the pages and that no question is missing.
9. Each correct answer carries **4 marks**. There is **no negative marking**.
10. A candidate has to write his / her answer in the **OMR** sheet by darkening the appropriate bubble with the help of **Blue / Black Ball Point** Pen only as the correct answer(s) to the question attempted.

Enrollment Id : _____ Test Date : _____

Student Name : _____

Parents Name : _____

Class _____ Roll No. _____

Mobile No : (Student) _____ (Father's) _____

SECTION -A [IQ]

This section contains 15 Multiple Choice Questions. Each question has four choices (A), (B), (C) and (D) out of which ONLY ONE is correct

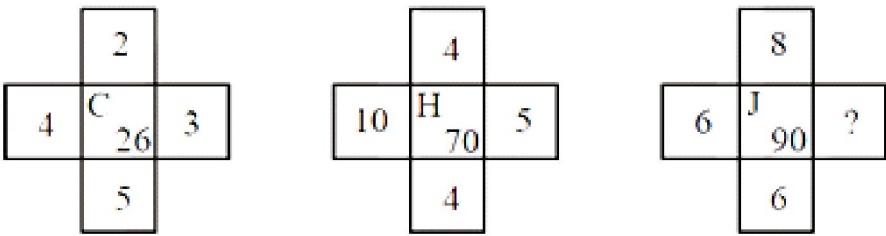
Directions (Q.1 to 3):

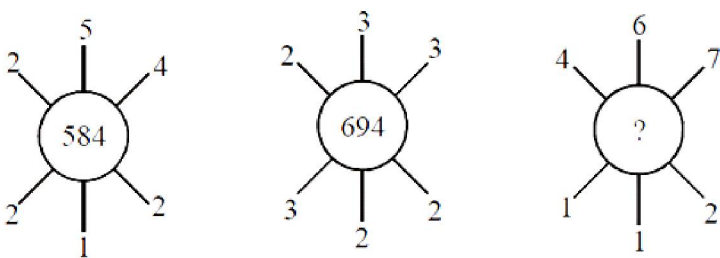
Each of the following questions contains certain information regarding the movement of a person from a certain point to his destination or relating to the position of a group of persons. Study the information carefully and tick the right option out of (A) to (D)

1. A man walks 1 km towards East and then he turns to South and walks 5 km. Again he turns to East and walks 2 km, after this he turns to North and walks 9 km. Now, how far is he from his starting point?
(A) 3 km (B) 4 km (C*) 5 km (D) 7 km
2. Amit walked 25 metres towards South. Then he turned to his left and walked 20 metres. He then turned to his left and walked 25 metres. He turned to his right and walked 15 metres. At what distance is he from the starting point and in which direction?
(A*) 35 metres East (B) 35 metres North (C) 40 metres East (D) 60 metres East
3. From his house, Julia went 15 kms to the North. Then she turned West and covered 10 kms. Then, she turned South and covered 5 kms. Finally, turning to East, she covered 10 kms. In which direction is she from her house?
(A) East (B) West (C*) North (D) South
4. 11, 10, ?, 100, 1001, 1000, 10001
(A*) 101 (B) 110 (C) 111 (D) None of these
5. 5, 2, 11, 23, ?
(A) 196 (B) 367 (C*) 254 (D) 235
6. 3, 7, 23, 95, ?
(A) 62 (B) 128 (C*) 479 (D) 575
7. If Letters of alphabets are written in reverse way then which letter will be seventh letter right to Q?
(A) K (B) U (C*) J (D) W
8. Select the word from given alternatives which can not be written from the letters of EDUCATED word
(A*) DUCK (B) CUTE (C) TADE (D) ACTE
9. Which name will come at 3rd place in a telephone directory from the following given names ?
(A) AMIT (B*) AMINA (C) ALOK (D) ABHIMAN
10. If FLARE is coded as 21, 15, 26, 9, 22, how would BREIF be coded in the same language?
(A) 25, 9, 22, 21, 18 (B) 5, 37, 11, 19, 13
(C) 13, 19, 11, 37, 5 (D*) 25, 9, 22, 18, 21

ROUGH WORK

11. If in certain code language, UTENSIL is coded as WVGPUKN, which word would be coded as DMSFXG?
- (A) BKQEVE (B) BKQDWE (C) BKQDWF (D*) BKQDVE

12. 
- (A*) 2 (B) 3 (C) 4 (D) 5

13. 
- (A) 937 (B) 824 (C) 769 (D*) 678

Direction (Q.14 & 15) :

In each of the following questions, four of the given five pairs are alike in a certain way and hence form a group. Which one does not belong to that group?

14. (A) LOCATE : OCLTAE (B) EXAMIN : XAEIMN
(C*) PLENTY : LEPTYN (D) COWARD : OWCRAD
15. (A) SUNDAY : NSVYDB (B*) MOTHER : TMPRHD
(C) PARENT : RPBTEO (D) MOSTLY : SMPYTM

ROUGH WORK

SECTION -B [BIOLOGY]

This section contains 20 Multiple Choice Questions. Each question has four choices (A), (B), (C) and (D) out of which ONLY ONE is correct

16. The green pigment present in chloroplast is
 (*A) Chlorophyll (B) Carotenes (C) Xanthophylls (D) Phycobilins
17. Organisms that can make their own food are
 (A) Chemotrophs (*B) Autotrophs (C) Saprotrophs (D) Parasites
18. Respiration in plant leaves occurs through
 (A) Lenticels (B) Root hair (*C) Stomata (D) Hydathode
19. Which of the following is not a function of lymph?
 (A) Transportation of fat (B) Absorption of fat
 (*C) Collecting oxygen and carbon dioxide (D) Providing immunity
20. Haemoglobin is transported through
 (A) Lymph node (*B) Erythrocytes
 (C) Leucocytes (D) Thrombocytes
21. Structure that forms a protective covering over the brain is called
 (A) Pericardium (B) Pleural membrane
 (*C) Meninges (D) Renal capsule
22. The right and left hemisphere of the human brain are joined by
 (*A) Corpus Callosum (B) Spinal cord
 (C) Choroid plexus (D) Brain stem
23. Structure in neuron that is responsible for the synthesis of neurotransmitters
 (A) Myelin sheath (*B) Nissle's granule
 (C) Schwann cell (D) Axon terminal
24. A network of neurons is called
 (A) Brain (B) Ganglion (*C) Nerve cells (D) Hypothalamus
25. Hormone that is responsible of growth of skeletal muscle in human body?
 (A) Thyroxine (*B) Growth hormone (C) Insulin (D) Adrenaline
26. Glycolysis takes place in
 (A) Mitochondria (*B) Cytoplasm (C) Nucleus (D) Chloroplast

ROUGH WORK

27. Pulmonary vein carries
(A) Deoxygenated blood (*B) Oxygenated blood (C) Mixed blood (D) Lymph
28. Imagine you have mistakenly touched a live electric wire. As soon as you come in contact your hand was withdrawn. Which part of the nervous system is responsible for such quick involuntary response?
(A) Central nervous system (*B) Peripheral nervous system
(C) Autonomic nervous system (D) Hypothalamus
29. We experience a violent coughing instantly when food slips into the wind pipe. Coughing without involvement of brain is
(A) Voluntary movement (*B) Involuntary movement
(C) Conditioned reflex (D) Acquired reflex
30. A man who has consumed alcohol fails to maintain a steady body posture because
(A) He is brain is experiencing happiness (B) His cerebrum is feeling sleepy
(C) His hypothalamus is slow (*D) His cerebellum is affected
31. A patient with complaint of excessive urine output has come to you to seek advice. Deficiency of which hormone is responsible for the loss of reabsorption of water in such patients?
(A) Oxytocin (B) Prolactin (C) Insulin (*D) Anti diuretic hormone
32. You are returning from school. Out of mischief you picked up a piece of rock and hit a stray dog. The stray dog starts chasing you. You started to run in order to save yourself. Which hormone is responsible for such circumstance?
(A) Releasing hormone (B) Tropic hormone (C) Adrenaline (*D) All of the above
33. The process of loss of water droplet through tiny pores present on the margin of the leaves at night is called
(A) Transportation (B) Transpiration (C) Evaporation (*D) Guttation
34. If pepsin is lacking in gastric juice then which of the following event in stomach will be affected
(A) Digestion of starch into sugars (B) Digestion of fats into glycerol and fatty acids
(C) Digestion of nucleic acids (*D) Digestion of proteins into peptides
35. Apical dominance means
(A) Suppression of growth of apical bud by axillary buds
(*B) Suppression of growth of axillary buds by the presence of apical bud
(C) Stimulation of growth of axillary buds by removal of apical bud
(D) Inhibition of growth of axillary buds by removal apical bud

ROUGH WORK

SECTION -C [SCIENCE]

This section contains 15 Multiple Choice Questions. Each question has four choices (A), (B), (C) and (D) out of which ONLY ONE is correct

36. A ray of light goes from a medium of refractive index μ_1 to a medium of refractive index μ_2 . The angle of incidence is i and the angle of refraction is r . Then, $\sin i / \sin r$ is equal to
- (A) μ_1 (B) μ_2 (C) $\frac{\mu_1}{\mu_2}$ (D*) $\frac{\mu_2}{\mu_1}$
37. A thin lens and a spherical mirror have a focal length of + 15 cm each.
- (A*) Both are convex.
 (B) The lens is convex and the mirror is concave.
 (C) The lens is concave and the mirror is convex.
 (D) Both are concave.
38. A convex lens forms a virtual image when an object is placed at a distance of 18 cm from it. The focal length must be
- (A) greater than 36 cm (B*) greater than 18 cm
 (C) less than 36 cm (D) less than 18 cm
39. Soda ash is
- (A) $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$ (B*) Na_2CO_3 (C) NaOH (D) NaHCO_2
40. 10 ml of a solution of NaOH is found to be completely neutralised by 8mL of a given solution of HCl . If we take 20 mL of the same solution of NaOH , the amount HCl solution (the same solution as before required to neutralise it will be.
- (A) 4 mL (B) 8 mL (C) 12 mL (D*) 16 mL
41. Dilute sulphuric acid is poured on zinc granules. Which of the following statements is false regarding this reaction ?
- (A) Hydrogen gas is released (B*) It is an endothermic reaction
 (C) It is a chemical reaction (D) There will be rise in temperature
42. The pH of the solution of $5 \times 10^{-8} \text{NHCl}$ at 25°C is –
- (A) 6.3 (B*) 6.9 (C) 7.3 (D) 7.9
43. A metal occurs in nature as in are X which on heating in air converts to Y. Y reacts with unreacted X to give the metal. The metal is
- (A) Hg (B*) Cu (C) Zn (D) Fe

ROUGH WORK

44. One of the major environmental concerns is the phenomenon of acid rain. Rain water is an unpolluted atmosphere will be
 (A*) Neutral (B) Slightly basic (C) Slightly acidic (D) Strongly acidic
45. The metal which can displace copper from copper sulphate solution.
 (A) Hg (B) Au (C*) Fe (D) Ag
46. When a ray of light enters a glass slab from air.
 (A*) Its wavelength decreases.
 (B) Its wavelength increases.
 (C) Its frequency decreases.
 (D) Neither its wavelength nor its frequency changes.
47. An eye specialist prescribes spectacles having a combination of a convex lens of focal length 40 cm in contact with a concave lens of focal length 25 cm. The power of this lens combination in diopters is
 (A) +1.5 (B*) -1.5 (C) +6.67 (D) -6.67
48. A point object is placed at the centre of a glass sphere of radius 6 cm and refractive index 1.5. The distance of the virtual image from the surface is
 (A) 6 cm (B*) 4 cm (C) 12 cm (D) 9 cm
49. A convex lens is in contact with a concave lens. The magnitude of the ratio of their focal lengths is $\frac{2}{3}$. Their equivalent focal length is 30 cm. What are their individual focal lengths?
 (A*) 10, -15 (B) -10, 15 (C) 75, 50 (D) -75, 50
50. A short linear object of length 'b' lies along the axis of a concave mirror of focal length f at a distance u from the pole of the mirror. The size of the image is approximately equal to
 (A) $b\left(\frac{u-f}{f}\right)^{1/2}$ (B) $b\left(\frac{f}{u-f}\right)^{1/2}$ (C) $b\left(\frac{u-f}{f}\right)$ (D*) $b\left(\frac{f}{f-u}\right)^2$

ROUGH WORK

SECTION -D [CHALLENGER]

This section contains 10 Multiple Choice Questions. Each question has four choices (A), (B), (C) and (D) out of which ONLY ONE is correct

51. The mode of nutrition in which both organisms are benefited equally is
 (*A) Mutualistic (B) Parasitic (C) Saprophytic (D) Holozoic
52. The process of absorbing nutrients from food and distributing them throughout the body for growth and repair is termed as
 (A) Ingestion (*B) Assimilation (C) Digestion (D) Egestion
53. Site for synthesis of bile juice is
 (A) Gall bladder (B) Kidney (*C) Liver (D) Pancreas
54. Which of them is NOT a function of liver?
 (A). Erythropoiesis in infants (B) Glycogenolysis
 (*C) Storage of bile (D) Detoxification
55. Elevated blood pressure measures 140/90 mm of Hg. Which instrument is used for such measurements
 (A) Stethoscope (*B) Sphygmomanometer
 (C) Potometer (D) Medical Barometer
56. Granular structure present in the cell body of neuron is called
 (A) Glycogen granule (B) Phosphate granule
 (*C) Nissle's granule (D) Dendrite
57. Inflammation in protective coverings over the brain due to bacterial infection is called
 (*A) Meningitis (B) Pericarditis
 (C) Nephritis (D) Pleuritis
58. Arrangement of grey matter and white matter is opposite in which structure of human nervous system
 (A) Brain and kidney (*B) Brain and spinal cord
 (C) Spinal cord and Neuron (D) Neuron and heart
59. Clotting of blood is the primary function of
 (A) Erythrocytes (B) Leucocytes (*C) Thrombocytes (D) Plasma
60. Over secretion of growth hormone in young one's causes
 (A) Kidney failure (*B) Gigantism (C) Diabetes insipidus (D) Goitre

ROUGH WORK

ANSWER KEY

1. (C) 2. (A) 3. (C) 4. (A) 5. (C) 6. (C) 7. (C)
8. (A) 9. (B) 10. (D) 11. (D) 12. (A) 13. (D) 14. (C)
15. (B) 16. (A) 17. (B) 18. (C) 19. (C) 20. (B) 21. (C)
22. (A) 23. (B) 24. (C) 25. (B) 26. (B) 27. (B) 28. (B)
29. (B) 30. (D) 31. (D) 32. (D) 33. (D) 34. (D) 35. (B)
36. (D) 37. (A) 38. (B) 39. (B) 40. (D) 41. (B) 42. (B)
43. (B) 44. (A) 45. (C) 46. (A) 47. (B) 48. (B) 49. (A)
50. (D) 51. (A) 52. (B) 53. (C) 54. (C) 55. (B) 56. (C)
57. (A) 58. (B) 59. (C) 60. (B)

ROUGH WORK

