

MENIIT

NEET • IIT-JEE



MTSE SAMPLE PAPER

Standard - X
(Moving to Standard - XI)

Code : CM-SP

MERIT & APTITUDE TEST

(CODE: CM)

Time: 90 Minutes

Maximum Marks: 220

Instructions

(A) GENERAL

1. This booklet is your Question Paper. It contains **FOUR sections**. **Section-(A)** has **12 questions of Physics**, **Section-(B)** has **12 questions of Chemistry**, **Section-(C)** has **16 questions of Biology** and **Section-(D)** contains **15 questions from Mental Aptitude**.
2. This booklet contains **55 questions of four mark each in all**. All the questions are **COMPULSORY**.
3. Blank papers, clip boards, log tables, slide rule, calculators, cellular phones and electronic gadgets in any form, are not allowed.
4. Write your **Name and Roll No.** in the space provided at the bottom of this sheet.

(B) FILLING IN THE OMR SHEET

5. On the OMR sheet, **write in ink** your Name, Roll No., name of the centre and put your signature in the appropriate boxes.
6. Every question has **four choices** for its answer (A), (B), (C) & (D). Only **one** of them is the right answer.
7. On the OMR sheet, for each question number, darken **only one** bubble with pen only corresponding to what you consider to be the most appropriate answer.

(C) MARKING SCHEME

8. (i) You will be awarded **4 marks** if you have darkened the bubble corresponding to the right answer.
(ii) In case you have darkened the wrong bubble no marks will be deducted for that response. **There is NO NEGATIVE MARKING.**

Name of the Candidate :

Roll Number :

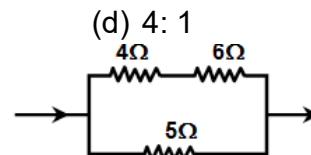
Date of Examination : **Centre:**

SECTION – (A) PHYSICS

1. Two resistors of 6Ω and 9Ω are connected in series to a 120 V source. The power consumed by the 6Ω resistor is
 (a) 384 W (b) 576 W (c) 1500 W (d) 1800 W

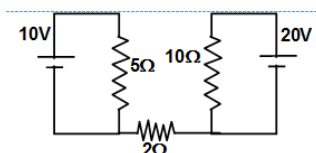
2. Two wires of same length and material have radii r and $2r$. The ratio of their specific resistances is
 (a) $1:2$ (b) $1:1$ (c) $1:4$ (d) $4:1$

3. In the given circuit, the heat produced in the 5Ω resistor due to the current flowing through it is 10 calories per second. The heat generated in the 4Ω resistors is



- (a) 1 cal/sec (b) 2 cal/sec
 (c) 3 cal/sec (d) 4 cal/sec

4. Find current in 2Ω resistor
 (a) 0 (b) 2 A
 (c) 4 A (d) 1 A



5. A light ray is made to incident on a glass plate with angle of incidence 15° and then reflected. Then the angle of deviation is
 (a) 45° (b) 130° (c) 150° (d) 90°

6. The velocity of light in air is $3 \times 10^{10}\text{ ms}^{-1}$ and in glass is $2 \times 10^{10}\text{ ms}^{-1}$. The refractive index of glass w.r.t air is
 (a) $2/3$ (b) $3/2$ (c) $4/3$ (d) $9/4$.

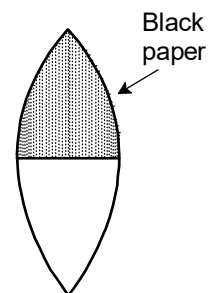
7. A virtual, erect and magnified image of an object is to be produced with a concave mirror of focal length 12 cm . Which of the following object distance should be chosen for this purpose?

- (a) 10 cm (b) 14 cm (c) 18 cm (d) 24 cm

8. Total internal reflection is possible only when light travels from
 (a) denser to rarer medium (b) rarer to denser medium
 (c) either of these (d) none of these

9. The focal length of the eye lens increases when eye muscles
 (a) are relaxed and lens becomes thinner
 (b) contract and lens becomes thicker
 (c) are relaxed and lens becomes thicker
 (d) contract and lens becomes thinner

10. A long-sighted person cannot see objects nearer to his eye than 50 cm. To enable him to read a book 25 cm away, he should use spectacle lenses whose power in dioptries is _____.
- (a) -6 (b) -4 (c) -2 (d) +4
11. When light rays enter the eye, most of the refraction occurs at the
- (a) crystalline lens (b) outer surface of the cornea
(c) iris (d) pupil
12. How will the image formed by a convex lens be affected if the upper half of the lens is wrapped with a black paper?
- (a) The size of the image is reduced to one-half.
(b) the upper half of the image will be absent.
(c) The brightness of the image is reduced.
(d) There will be no effect.



SECTION – (B) CHEMISTRY

13. Rusting of iron is a chemical reaction. The reaction can be termed as
- (a) Displacement (b) combination
(c) Double decomposition (d) substitution
14. When iron nails are put in a solution of CuSO_4 ,
- (a) copper metal is displaced (b) the blue color turns light green
(c) the copper metal is deposited on the iron nails
(d) all the above
15. The formula for rust is
- (a) CuO (b) $\text{Fe}_2\text{O}_3 \cdot x\text{H}_2\text{O}$
(c) AgNO_3 (d) AgS
16. In the reaction $\text{PbO} + \text{C} \rightarrow \text{Pb} + \text{CO}$
- (a) PbO is oxidized (b) C acts as an oxidizing agent
(c) C acts as a reducing agent.
(d) This reaction does not represent redox reaction.
17. The acid used in making of vinegar is:
- (a) Formic acid (b) Acetic acid (c) Sulphuric acid (d) Nitric acid
18. Common name of H_2SO_4 is
- (a) Oil of vitriol (b) Muriatic acid (c) Blue vitriol (d) Green vitriol
19. $\text{Zn} + (\text{X}) \longrightarrow \text{ZnSO}_4 + \text{H}_2$. Here, X is
- (a) CuSO_4 (b) HCl (c) H_2SO_4 (d) HNO_3

20. Which of the following is the weakest base?
 (a) NaOH (b) NH₄OH (c) KOH (d) Ca(OH)₂
21. Which of the following properties is not a characteristic of metals?
 (a) Metallic luster (b) High density
 (c) Hardness (d) Low melting and boiling point
22. Which of the following metals generally occur in liquid state at 30°C?
 (a) Mercury (b) Bromine
 (c) Gallium (d) Both (a) & (c)
23. Reactivity of zinc is _____ than hydrogen.
 (a) less (b) more
 (c) equal (d) sometimes more sometimes less
24. Which of the following metals reacts vigorously with oxygen at room temperature?
 (a) Zinc (b) Magnesium (c) Sodium (d) Copper

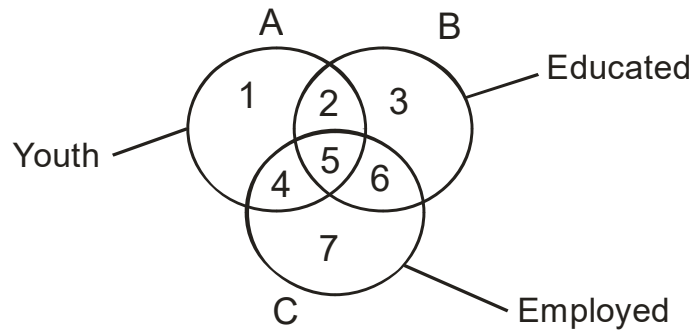
SECTION – (C) BIOLOGY

25. Partially digested food that leaves the stomach is called:
 (a) Chyle (b) Chyme (c) Bolus (d) None of these
26. The Grana & Stroma are the parts of which cell organelles:
 (a) Mitochondria (b) Chloroplast
 (c) Ribosome (d) Golgi bodies
27. Functional unit of kidney is:
 (a) Nephron (b) Nephritis
 (c) Neuron (d) Loop of Henle
28. Among which one of the following are part of nephron?
 (a) Cortex (b) Medulla
 (c) Bowman's capsule (d) Collecting duct
29. Leaves respire with the help of
 (a) lenticels (b) stomata
 (c) plasmodesmata (d) cuticle
30. Which is the correct sequence of the air passage in man?
 (a) nasal cavity → pharynx → larynx → trachea → bronchi → bronchioles → alveoli sac
 (b) nasal cavity → pharynx → trachea → larynx → bronchi → bronchioles → alveoli
 (c) nasal cavity → larynx → bronchi → pharynx → trachea → bronchioles → alveoli
 (d) nasal cavity → larynx → pharynx → trachea → bronchi → bronchioles → alveoli
31. Rings of cartilage are present in the following:
 (a) Oesophagus (b) Trachea (c) Throat (d) Duodenum
32. Companion cells are usually seen to be associated with
 (a) fibres tissue (b) parenchyma tissue
 (c) xylem tissue (d) sieve tissue

33. The zygote is formed by the fusion of
(a) male gametes (b) male & female gametes
(c) female gametes (d) spores & gametes
34. Growth of pollen tubes towards ovule for fertilization is due to
(a) Thigmotropism (b) Phototropism
(c) Chemotropism (d) Hydrotropism
35. The anther contains:
(a) Sepals (b) Ovules
(c) Carpel (d) Pollen grains
36. Which is not a method of asexual reproduction
(a) Micropropagation (b) Budding
(c) Fertilization of Gametes (d) Layering
37. In reflex action the reflex arc is formed by
(a) brain → spinal cord → muscles
(b) receptor → spinal cord → muscles
(c) muscle → receptor → brain
(d) muscles → spinal cord → receptor
38. Myelin sheath is a covering of
(a) muscle cell (b) axon (c) blood vessels (d) osteocyte
39. The functional junction between two neurons is
(a) synapse (b) axon (c) dendrites (d) None of these
40. Which one of the following pairs is not correct?
(a) The pituitary gland – Adrenalin
(b) Pancreas – Insulin (c) Ovary – Estrogen
(d) Testis – Testosterone

SECTION – (D) APTITUDE

41. Introducing a man Neeraj said, "His wife is the only daughter of my wife." How Neeraj is related to that Man?
(a) Father (b) Grandfather (c) Father-in-law (d) Brother
42. On what dates of August 1980 did Monday fall?
(a) 4th, 11th, 18th & 25th (b) 3rd, 10th, 17th & 24th
(c) 6th, 13th, 20th & 27th (d) 9th, 16th, 23th & 30th
43. If PORTER is written as QNSSFQ, then BRIGHT would be coded as:
(a) CQJFIS (b) CNJHIS (c) CQJFGS (d) CNJHIU
44. Study the diagram below and identify the region representing youth who are employed but not educated.



- (a) 4 only (b) 1, 4, 7 (c) 4, 7 (d) 4, 5, 6

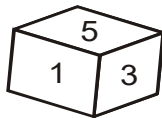
45. If '+' means 'divided by', '-' means 'multiplied by', '×' means 'minus' and '÷' means 'plus', which of the following will be the value of the expression $16 \div 8 - 4 + 2 \times 4$?
 (a) 16 (b) 28 (c) 32 (d) 44

46. If ÷ means +, - means ÷, × means - and + means ×, then $\frac{(36 \times 4) - 8 \times 4}{4 + 8 \times 2 + 16 \div 1} = ?$
 (a) 0 (b) 8 (c) 15 (d) 20

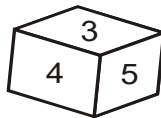
47. Laxman went 15 kms to the west from my house, then turned left and walked 20 kms. He then turned East and walked 25 kms finally turning left covered 20 kms. How far was he from his house?

- (a) 5 kms (b) 10 kms (c) 40 kms (d) 80 kms

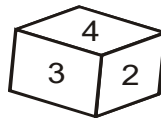
48. Find out the missing number in the following sequence: 1, 3, 3, 6, 7, 9, ?, 12, 21.
 (a) 10 (b) 11 (c) 12 (d) 13



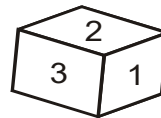
(i)



(ii)



(iii)



(iv)

49. What is number is opposite 4?
 (a) 1 (b) 2 (c) 5 (d) 6

50. Numbers are arranged according to some rule in the cells made into a square. One cell is left empty, and we have to find the way the numbers are arranged and mark the answer from the choice given below:

- (a) 12 (b) 15
 (c) 30 (d) 28

9	3	?	21
7	5	9	27

51. Out of the four alternatives, choose the one which expresses the right meaning of the given word: Proliferate:

- (a) Pro-literate (b) Prohibit (c) Stipulate (d) Reproduce

52. Out of the four alternatives, choose the one which expresses the right meaning of the given word: Easy:

- (a) Elementary (b) Artful (c) Infantile (d) Pretentions

53. Which one is like count, List and Weight?

- (a) number (b) Measure (c) Sequence (d) Compare

54. How many times do the hands of a clock coincide in a day?

- (a) 24 (b) 22 (c) 21 (d) 20

55. How many times do the hands of a clock point towards each other in a day?

- (a) 24 (b) 22 (c) 12 (d) 22

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ANSWER KEY | SAMPLE PAPER (MED)**Standard – X Moving to Standard – XI • (Code : CM-SP)**

- | | | |
|---------|---------|---------|
| 1. (a) | 20. (b) | 39. (a) |
| 2. (b) | 21. (d) | 40. (a) |
| 3. (b) | 22. (d) | 41. (c) |
| 4. (a) | 23. (b) | 42. (a) |
| 5. (c) | 24. (c) | 43. (a) |
| 6. (b) | 25. (b) | 44. (a) |
| 7. (a) | 26. (b) | 45. (b) |
| 8. (a) | 27. (a) | 46. (d) |
| 9. (a) | 28. (c) | 47. (b) |
| 10. (d) | 29. (b) | 48. (d) |
| 11. (b) | 30. (a) | 49. (a) |
| 12. (c) | 31. (b) | 50. (b) |
| 13. (b) | 32. (d) | 51. (d) |
| 14. (d) | 33. (b) | 52. (a) |
| 15. (b) | 34. (c) | 53. (b) |
| 16. (c) | 35. (d) | 54. (b) |
| 17. (b) | 36. (c) | 55. (b) |
| 18. (a) | 37. (b) | |
| 19. (c) | 38. (b) | |