



Nirmal Vidya

I I T A C A D E M Y

ADMISSION TEST

Foundation Program

(VIII CLASS)

for

IIT-JEE/PMT

Time: 1:30 Hr.

Maximum Marks: 145

INSTRUCTIONS

Please read the instructions carefully. You are allotted 5 minutes specifically for this purpose.

1. There are 55 questions in this paper.
2. Each question has only ONE, correct answer. In case you wish to change an answer, erase the old answer and mark your fresh choice.
3. For each correct answer in IQ 2 marks and PCBM 3 marks will be awarded. For each wrong answer 1 mark will be deducted.
4. Question No. 1 to 20 of IQ, 21 to 28 of Physics, 29 to 36 of Chemistry, 37 to 44 of Biology and 45 to 55 of Mathematics.
5. Use of calculator is not permitted.
6. Use of Logarithmic table is not permitted.
7. Darken the bubble by pencil only.
8. Write your Roll number, Name at the specified space on the OMR Sheet.
9. All the notations used in this paper are standard.

NIRMAL VIDYA IIT/PMT ACADEMY

GURGAON

Gurgaon : :- NM-12 , 2nd Floor, Sector-14, Gurgaon, Haryana. Phone: 09650318389
Gurgaon : :- Near DPS, Sector-45, Gurgaon, Haryana. Phone: 09650318389

NCR

Manesar : National Security Guard , Primary School, Manesar, Haryana. Phone: 09650318389

TO BE FILL IN CAPITAL LETTERS

NAME OF THE STUDENT: _____

FATHER NAME : _____

Address: _____

SCHOOL NAME : _____

ROLL NO : _____

TEST DATE: _____

visit us at: www.nirmalvidya.in
e-mail: sksiitjee@gmail.com

IQ

Direction : Question No. (1-2) Find the odd one out

1. 24, 27, 31, 33, 36
(A) 24 (B) 27
(C) 31 (D) 33
2. 196, 169, 144, 121, 80
(A) 80 (B) 121
(C) 169 (D) 196

Directions: In each of the following questions, a number series is given with one term missing. Choose the correct alternative that will continue the same pattern and fill in the blank spaces.

3. 336, 210, 120, ?, 24, 6, 0
(A) 40 (B) 50
(C) 60 (D) 70
4. 2, 9, 28, ?, 126, 217
(A) 36 (B) 42
(C) 56 (D) 65

Direction for questions : In each question, a series of letters satisfying a certain pattern are given. Identify the pattern and then find the letter/letters that will come in place of the blanks.

5. Z, Y, X, W, V, T, S, R, Q, P, N, M, L, K, J, _____
(A) K (B) H
(C) I (D) G
6. R, O, S, N, T, M, U _____
(A) L (B) R
(C) P (D) K
7. Deepak said to Nitin, "That boy playing football is the younger of the two brothers of the daughter of my father's wife". How is the boy playing football related to Deepak?
(A) Son (B) Brother
(C) Cousin (D) Niece
8. Pointing out to a lady, a girl said "she is the daughter-in-law of the grandmother of my father's only son. "How is the lady related to the girl?
(A) Sister-in-law (B) Mother
(C) Aunt (D) Mother-in-law
9. A and B are brothers. C and D are sisters. A's son is D's brother. How is B related to C?
(A) Father (B) Brother
(C) Grand father (D) Uncle

Direction for questions : In each question, a series of letters satisfying a certain pattern are given. Identify the pattern and then find the letter that will come in place of the blank.

10. Z, Y, A, X, B, W, C, _____

- (A) U (B) V
(C) D (D) F

11. L, M, P, U, B, K, _____

- (A) L (B) M
(C) P (D) V

12. Find the missing number.

18	24	32
12	14	16
3	?	4
72	112	28

- (A) 3 (B) 4 (C) 5 (D) 6

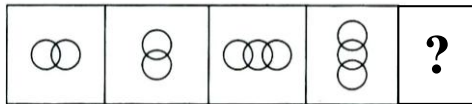
13. If + means \times , \times means \div , and \div means +, then $15 \times 3 \div 15 + 5 - 2 = ?$

- (A) 20 (B) 10 (C) 0 (D) 6

14. If the day before yesterday was Thursday, when will be Sunday?

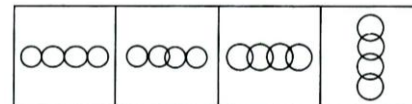
- (A) Today (B) Two days after today
(C) Tomorrow (D) Day after tomorrow

15. Problem Figures



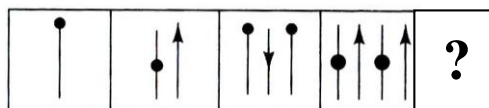
A B C D

Answer Figures



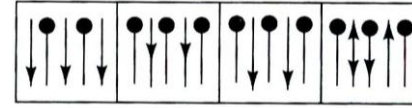
(a) (b) (c) (d)

16. Problem Figures



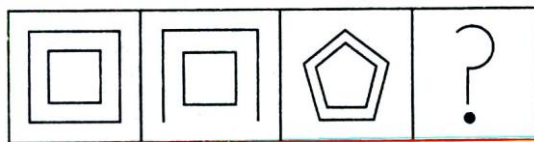
A B C D

Answer Figures



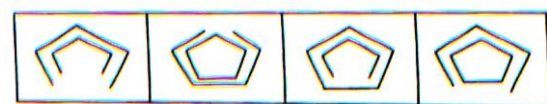
(a) (b) (c) (d)

17. Problem Figures



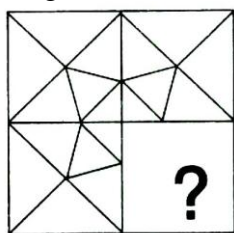
A B C D

Answer Figures



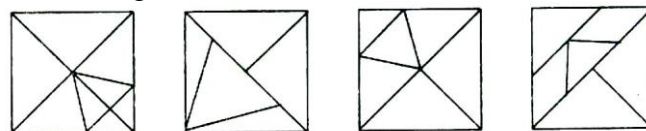
(a) (b) (c) (d)

18. Problem Figures



(X)

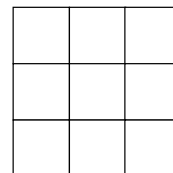
Answer Figures



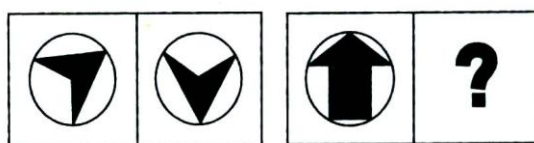
(a) (b) (c) (d)

19. How many maximum squares are there in the following figure?

- (A) 16 (B) 13
(C) 10 (D) 14

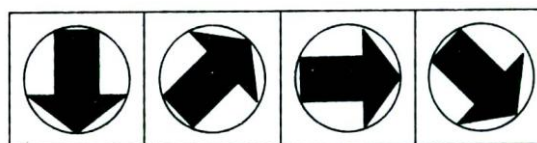


20. Problem Figures



A B C D

Answer Figures



(a) (b) (c) (d)

PHYSICS

21. When a steel rod is heated, it becomes
(A) Lighter (B) Heavier
(C) A little longer (D) A little shorter
22. A scooterist covers a distance of 3 km in 5 minutes. He travels with a speed of
(A) 100 m s^{-1} (B) 360 km h^{-1}
(C) 100 cm s^{-1} (D) 600 m min^{-1}
23. Physical quantity which we can't obtain from a distance-time graph is
(A) Speed (B) Time taken
(C) Change in position (D) Change in weight
24. The necessary requirement for a fuse wire is
(A) Conductor with low melting point (B) Conductor with high melting point
(C) Insulator with low melting point (D) Insulator with high melting point
25. Which of the following is correct for unit kilowatt hour?
(A) Current (B) Potential difference
(C) Power (D) None of these

26. The mirror which is used for side view in vehicles is
(A) Plane mirror (B) Concave mirror
(C) Convex mirror (D) None of these
27. When a person moves closer to a plane mirror, the size of his image in the mirror
(A) Increases
(B) Remains the same
(C) Decreases
(D) First increases and then decreases
28. If we put our hand inside a bucket of water, it appears to be bent. This happens because of a phenomenon called
(A) reflection (B) total internal reflection
(C) refraction (D) diffraction

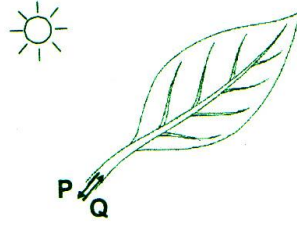
CHEMISTRY

29. Riya described a fabric as following
- ☞ It absorbs water quickly
 - ☞ It is soft to touch
 - ☞ It creases easily
 - ☞ It can be washed and ironed easily
 - ☞ It is obtained from plant sources
- Which of the following fibres can form such fabric?
(A) Cotton (B) Silk (C) Wool (D) Nylon
30. Burning piece of wool fabric smells like burning hair. This is because both wool and hair are made up of
(A) Proteins (B) Fats
(C) Vitamins (D) Carbohydrates
31. Raghav categorized the following household items into acids and bases
- | Acids | Bases |
|--------------|----------------|
| 1. Lemon | 4. Baking soda |
| 2. Antacid | 5. Vinegar |
| 3. Tea | 6. Curd |
- Which of them is placed under the wrong category?
(A) 3 and 5 only (B) 2 and 6 only (C) 3, 4 and 5 (D) 2, 5 and 6

BIOLOGY

37. During a cyclone air moves from
(A) Region of high pressure to low pressure
(B) Region of low pressure to high pressure
(C) Region of low velocity to high velocity
(D) Region of high pressure to low velocity
38. Why are cloudy nights warmer than clear nights?
(A) The clouds do not allow the heat radiating from the earth to escape
(B) Moisture in the air entraps moonlight
(C) The clouds result in heavy rainfall at night
(D) Both (A) and (C)
39. Which of the following is not one of the ways to prevent water pollution?
(A) Toxic products like paints, automobile oil, polishes, and cleaning products should be stored and disposed properly
(B) Non-degradable products like disposable plates, glass, plastic, etc. should not be thrown into the drain
(C) Farmers should try using natural fertilizers and pesticides
(D) Cooking oil, ghee, mayonnaise and fats should be poured down the drains as they will help in greasing the draining pipes and thus making the flow of other wastes easy
40. Which of the following substances is present in a higher percentage in exhaled air than in inhaled air?
(i) Carbon dioxide (ii) Oxygen
(iii) Water vapour (iv) Nitrogen
(A) only (i) (B) (i) and (ii)
(C) (ii) and (iv) (D) (i), (ii), (iii) and (iv)
41. The pharynx actually has two apertures, one opening into the windpipe and the other into the _____. The aperture opening into the windpipe is guarded by _____. It closes the windpipe when you take_____.
- Select the correct sequence of words to complete the above passage.
(A) Oesophagus, Uvula, Food (B) Stomach, Epiglottis, Water
(C) Oesophagus, Epiglottis, Food (D) Liver, Uvula, Water
42. Germination takes place when the
(A) Previously dormant embryo is activated
(B) Cotyledons emerge above ground
(C) Hypocotyl or epicotyl emerges above ground
(D) Vascular tissue begins the transport of water and minerals

43. Look at the given diagram carefully. Which of the following correctly matches the substances carried in the direction of arrows P and Q?

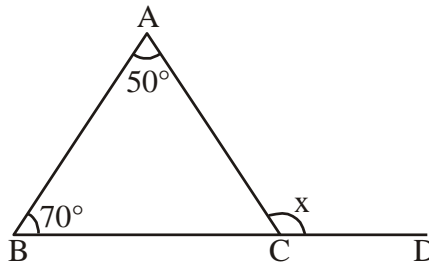


- | P | Q |
|--------------------|----------------|
| (A) Water | Sugar |
| (B) Carbon dioxide | Oxygen |
| (C) Water vapour | Carbon dioxide |
| (D) Sugar | Water |
44. Aspergillosis is a disease of animals which is caused by
- | | |
|---------------|------------|
| (A) Protozoan | (B) Virus |
| (C) Bacteria | (D) Fungus |

MATHEMATICS

45. The value of $(-3) \times (-6) \times (-2) \times (-1)$ is
- | | |
|---------|--------|
| (A) -12 | (B) 36 |
| (C) -36 | (D) 12 |
46. The complement angle of 75° is
- | | |
|----------------|-----------------|
| (A) 20° | (B) 105° |
| (C) 15° | (D) 55° |
47. The supplement angle of 87° is
- | | |
|-----------------|----------------|
| (A) 93° | (B) 3° |
| (C) 103° | (D) 27° |
48. Diameter of a circular garden is 14 m, then its area is
- | | |
|-----------------------|-----------------------|
| (A) 88 m^2 | (B) 44 m^2 |
| (C) 154 m^2 | (D) 616 m^2 |
49. The value of $\frac{3}{13} \div \left(\frac{-4}{65}\right)$ is
- | | | | |
|----------------------|---------------------|--------------------|---------------------|
| (A) $-\frac{12}{65}$ | (B) $-\frac{4}{15}$ | (C) $\frac{4}{15}$ | (D) $-\frac{15}{4}$ |
|----------------------|---------------------|--------------------|---------------------|

50. Selling price of a toy car is ₹ 540. If the profit made by shopkeeper is 20%, the cost price of this toy is
 (A) ₹ 480/- (B) ₹ 450/-
 (C) ₹ 900/- (D) ₹ 520/-
51. 20% of 250 is
 (A) 60 (B) 50
 (C) 75 (D) 25
52. The perimeter of the rectangle whose length is 40 cm and a diagonal is 41 cm is
 (A) 98 cm (B) 88 cm
 (C) 78 cm (D) 360 m
53. If $P = -2$, then the value of $-3P^2 + 4P + 7$ is
 (A) -7 (B) -8
 (C) -9 (D) -13
54. If $x + y = 5$ and $xy = 6$, then $x - y$ is
 (A) 2 (B) 3
 (C) 1 (D) 0
55. The value of x is



- (A) 20° (B) 120°
 (C) 130° (D) 60°

