I.Q   Section - I
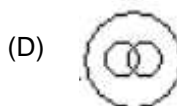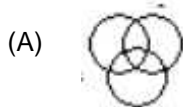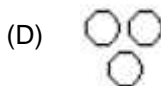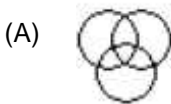
Straight Objective Type

This section contains 30 multiple choice questions numbered 1 to 30. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

1. Students line up in a queue in which Aman stands fifteenth from the left and Simran is seventh from the right. If they interchange their places, Simran would be fifteenth from the right. How many students are there in the queue?
    (A) 21   (B) 22   (C) 28   (D) 29

2. In a queue of children, Ajay is fifth from the left and Sunil is sixth from the right. When they inter change their places among themselves, Ajay becomes thirteenth from the left. Then, what will be Sunil's position from the right?
    (A) 8th (B) 14th (C) 15th (D) 16th

3. If south-east is called east, North west is called west, south-west is called south and so on what will north be called?
    (A) North-west   (B) South   (C) North-East   (D) East

4. Surya starts from his house towards West. After walking a distance of 30 m, he turned towards right and walked 20 m. He, then turned left and moving a distance of 10 m, turned to his left again and walked 40 m. He now turns to the left and walks 5 m. Finally he turns to his left. In which direction is he walking now?
    (A) South-west   (B) North   (C) South   (D) East

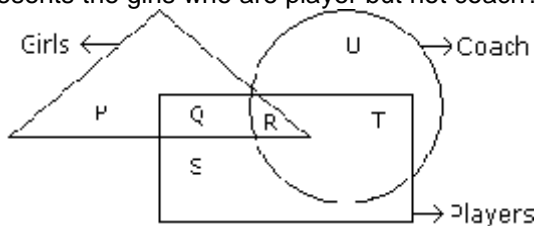5. Which of the following diagrams indicates the best relation between Tall man, Black hairedpeople and Indians?

    (A)

    (B)

    (C)

    (D)

Space for rough work

6. Which of the following diagrams indicates the best relation between Furniture, Chairs and Tables?

    (A)   (B)

    (C)   (D)

7. In the following figure triangle represents 'girls', Rectangle represents 'players' and circle represents 'coach'. Which part of the diagram represents the girls who are player but not coach?

    (A) P   (B) Q   (C) R   (D) S

8. In a certain code JOGGLE is written as LQIEJC. How is LESSON written in that code?
    (A) MGQUML (B) NGQUML   (C) NGUQMI   (D) NGUQML

9. In a certain code MUMBAI is coded as 59 and DELHI is coded as 38, How HYDERBAD is written in that code?
    (A) 68   (B) 67   (C) 63   (D) 69

10. If air is called green, green is called blue, blue is called sky, sky is called yellow, yellow is called water, and water is called pink, then what is the colour of clear sky?
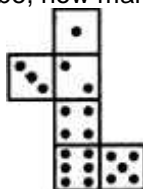   (A) Blue   (B) Sky   (C) Yellow   (D) Water

11. When the following figure is folded to form a cube, how many dots lie opposite the face bearing five dots?
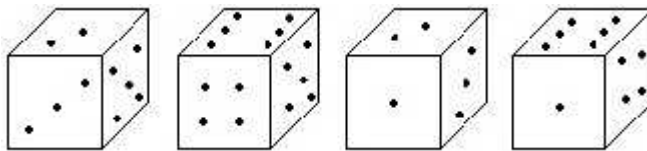

    (A) 1   (B) 2   (C) 3   (D) 4
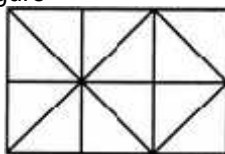
Space for rough work

12. From the four positions of a dice given below, How many points will be on the face opposite to in face which contains 1 points?

    (A) 1   (B) 5   (C) 4   (D) 6

13. Count the number of squares in the given figure

    (A) 6   (B) 7   (C) 9   (D) 10

14. Find the minimum number of straight lines required to make the given figure

    (A) 16   (B) 17   (C) 18   (D) 19

15. What is the minimum number of different colours required to paint he given figure such that no two adjacent regions have the same colour?

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

16. What was the day of the week on 26-January-1950?
    (A) Sunday   (B) Monday   (C) Wednesday   (D) Thursday

17. Today is Monday, after 61 days, the day will be:
    (A) Wednesday   (B) Saturday   (C) Tuesday   (D) Thursday

Space for rough work

18. Which of the following is not a leap year?
    (A) 700   (B) 800   (C) 1200   (D) 2000

19. How many times do the hands of a clock coincide in a day?
    (A) 20   (B) 21   (C) 22   (D) 24

20. At what angle the hands of a clock are inclined at 15 minutes past 5?
    (A) 58 1/23 degrees   (B) 64 degrees   (C) 67 1/2 degrees   (D) 72 1/2 degrees

21. At what time between 7 & 8 o'clock will the hands of a watch be in the straight line but not together ?
    (A) 5 3/11 min past 7   (B) 5 5/11 min past 7
    (C) 5 3,11 min past 7   (D) 43 min past 7

22. Introducing a gentleman, a lady said "His mother is the only daughter of my mother." How the gentleman is related to that lady?
    (A) Son   (B) Grandson   (C) Brother   (D) Father

Directions:(23 –24)

Following questions are based on the information given below:-
i. 'P*Q' means 'P is father of Q'
ii. 'P-Q' means 'P is sister of Q'
iii. 'P+Q' means 'P is mother of Q'
iv. 'P/Q' means 'P is brother of Q'

23. In the expression B+D*M/N, how is M related to B
    (A) Granddaughter   (B) Son
    (C) Grandson   (D) Granddaughter or grandson

24. Which of the following represents 'J is son of F'?
    (A) J/R-T*F   (B) J+R-T*F   (C) J/M-N*F   (D) None of the above

Directions:(25 –26)

In each question given below are Statements followed by conclusions numbered. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which of the given conclusions logically follows from the given Statements, disregarding commonly known facts.

25. Statement:
    I. Some pens are pencils   II. No pencil is fruit
    Conclusions:
    I. Some pens are fruit   II. Some pencils are pens
    (A) If only conclusion I follows   (B) If only conclusion II follows
    (C) If both conclusion I or II follows   (D) If neither I nor II follows

Space for rough work

26. Statement:
    I. Some cups are plates   II. Some plates are jugs
    Conclusions:
    I. Some cups are jugs   II. Some jugs are plates
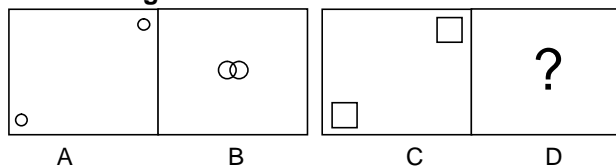   (A) If only conclusion I follows   (B) If only conclusion II follows
    (C) If both conclusion I or II follows   (D) If neither I nor II follows
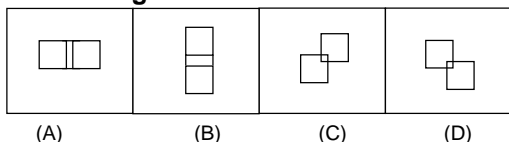
    Directions
    Figures A and B in problem figures are related in a particular manner, Establish the same relationship between figures C and D in problem figures by choosing a figure from the four alternatives, which would replace the question mark (?)

27.   **Problem Figures**

    A   B   C   D

    Answer Figures

    (A)   (B)   (C)   (D)

    Directions:(28 –30)

    In a five star hotel seven types of cuisines-Chinese, Mughlai, Continental, Mexican, Thai, Algerian and Malaysian are served on different days from Monday to Sunday.

    i.   Mexican is not served on the middle day of the week.
    ii. Chinese is served on the first day.
    iii. Mughlai is served a day before Continental and very next day of Thai.
    iv. Algerian is served on the last day off the week and third day after Continental.

28. On which day Mughlai is served?
    (A) Tuesday   (B) Wednesday
    (C) Thursday   (D) Cannot be determined

29. On which day Mexican is served?
    (A) Wednesday   (B) Tuesday
    (C) Friday   (D) Either Friday or Saturday

30. Which cuisine is served on Saturday?
    (A) Either Mughlai or Continental   (B) Continental
    (C) Mexican   (D) Cannot be determined

Space for rough work

Physics   Section - II

Straight Objective Type

Physics contains 15 multiple choice questions numbered 1 to 15. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

1. A force of 40 N is applied on a nail, whose tip has an area of cross-section of 0.001 cm². Find the pressure on the tip.
   (A) $4 \times 10^5 N/m^2$ (B) $4 \times 10^3 N/m^2$ (C) $4 \times 10^8 N/m^2$ (D) $4 \times 10^6 N/m^2$

2. The pressure exerted by water at the bottom of a tank of 5 m depth is $5 \times 10^4 N/m^2$. If g = 10 m/s². Calculate the density of water.
   (A) $10^2 Kg/m^3$ (B) $10^4 Kg/m^3$ (C) $10^2 Kg/m^3$ (D) $10^3 Kg/m^3$

3. The pressure difference between A, B and B, C is
   (A) Zero, not zero
   (B) Zero, zero
   (C) Not zero, not zero
   (D) Not zero, zero

4. A solid body weights 150 N. When placed on a wooden surface, the area of contact is found to be 3 m². Find the pressure exerted by the solid body on the wooden surface.
   (A) 50 Pa   (B) 40 Pa   (C) 500 Pa   (D) 400 Pa

5. A body of mass 10 kg is moving with a velocity of 5 m/s. Find the momentum associated with the ball.
   (A) 500 kg m/s   (B) 50 kg m/s   (C) 60 kg m/s   (D) 600 kg m/s

6. A body of mass 5 kg is moving with a uniform velocity of 10 m/s. It is acted upon by a force of 20 N. What will be its velocity after 1 s?
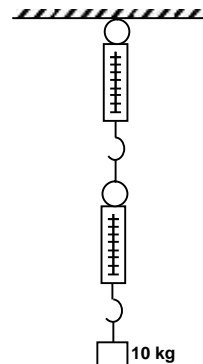   (A) 14 m/s   (B) 32 m/s   (C) 23 m/s   (D) 17 m/s

Space for rough work

7. Which one is not the example of contact force?
    (A) Gravitational force   (B) Muscular force
    (C) Friction force   (D) Normal force

8. A block of mass 10 kg is suspended through two light spring balances as shown in the figure.
    (A) Both the scales will read 10 kg
    (B) Both the scales will read 5 kg
    (C) The upper scale will read 10 kg and the lower zero
    (D) The readings may be anything but their sum will be 10 kg.

9. Friction is a/an
    (A) Self-adjusting force   (B) Necessary evil
    (C) Important force in daily life   (D) All the above

10. In a situation the contact force by a rough horizontal surface on a body placed on it has constant magnitude. If the angle between this force and the vertical is decreased, the frictional force between the surface and the body will
    (A) Increase   (B) Decreases
    (C) Remain the same   (D) May increase of decrease

11. Maximum force of friction is called:
    (A) Static friction   (B) Limiting friction   (C) Dynamic friction   (D) Sliding friction

12. Unit of sound level is
    (A) Hertz   (B) Second   (C) Decibels   (D) None of these

13. Sound travels in air at 0°C with a velocity of about
    (A) 300 m/s   (B) 330 m/s   (C) 360 m/s   (D) 380 m/s

14. A pendulum oscillates 40 times in 5 seconds. Find its time period.
    (A) 1/12 sec   (B) 1/10 sec   (C) 1/8 sec   (D) 1/5 sec

15. The frequency of a sound is 10 Hz. How many times does it vibrate in a minute?
    (A) 100   (B) 600   (C) 200   (D) 400

Space for rough work

Chemistry

Straight Objective Type

Chemistry contains 15 multiple choice questions numbered 16 to 30. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

16. Which of the following is a polyamide?
    (A) Rayon   (B) acrylic   (C) Nylon   (D) Terylene

17. The first fully man-made fibre is
    (A) rayon   (B) nylon   (C) polyester   (D) acrylic

18. Polythene is obtained by polymerization of
    (A) Ethene   (B) propene   (C) styrene   (D) isoprene

19. Synthetic fibres
    (A) are hydrophobic   (B) repel moisture
    (C) do not absorb water   (D) all of these are correct

20. Terrycotton is a
    (A) synthetic fibre   (B) natural fibre   (C) mixed fibre   (D) none of these

21. Magnesium metal is an essential constituent of
    (A) Storaata   (B) Plants   (C) Chlorophyll   (D) None of these

22. Which is used to manufacture fertilizers?
    (A) Coke   (B) Coal tar   (C) coal gas   (D) ammonical liquor

Space for rough work

23. Dolomite is a compound of _____ element?
    (A) Be   (B) Mg   (C) Ca   (D) Both B & C

24. The ore dehydrated calcium sulphate has the general name?
    (A) Gypsum   (B) Dolomite   (C) Calcite   (D) Epsom salt

25. Which coal has the highest percentage of carbon?
    (A) Peat   (B) Lignite   (C) Bituminous   (D) Anthracite

26. Which metal melts at our body temperature?
    (A) germanium   (B) potassium   (C) gallium   (D) sodium

27. Which of the following is non-lustrous?
    (A) copper   (B) iodine   (C) Graphite   (D) none

28. Non metals are generally
    (A) malleable   (B) ductile   (C) sonorous   (D) brittle

29. a S + b $HNO_3 \rightarrow$ c SO_2 + d NO_2 + e H_2O,the stoichiometric coefficients a,b,c,d and e respectively are
    (A) 2,1,3,4,2   (B) 1,2,2,2,4   (C) 1,4,1,4,2   (D) 3,4,2,1,2

30. Which of the following is most abundant metal in the earths crust?
    (A) Cu   (B) Zn   (C) Al   (D) Fe

Space for rough work

Mathematics

Straight Objective Type

Mathematics contains 15 multiple choice questions numbered 31 to 45. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

31. The multiplicative inverse of $-1\frac{1}{7}$ is

    (A) $\frac{8}{7}$ (B) $\frac{-8}{7}$ (C) $\frac{7}{8}$ (D) $\frac{7}{-8}$

32. $\frac{7}{11}$th of the money in Savitha's bank account is Rs. 77,000. How much money does Savitha has in her bank account?

    (A) Rs. 1, 00, 000   (B) Rs. 1,21,000   (C) Rs.44,000   (D) Rs. 1, 44, 00

33. All the squares together in a chess board have an area of 144 square units. How long is each square in the chess board?

    (A) 12 units   (B) 8 units   (C) 2 units   (D) $\frac{3}{2}$ units.

34. If one number of Pythagorean triplet is 2m, then the other two numbers are?
    (A) $m, m^2 + 1$ (B) $m^2 + 1, m^2 - 1$ (C) $m^2, m^2 - 1$ (D) $m^2, m + 1$

35. Difference between two perfect cubes is 189. If the cube root of the smaller number is 3. Find the cube root of the larger number.
    (A) 5   (B) 6   (C) 7   (D) 8

36. Evaluate: $\sqrt[3]{27} + \sqrt[3]{0.008} + \sqrt[3]{0.064}$
    (A) 3.60   (B) 3.24   (C) 3.024   (D) 0.324

37. The sum of three consecutive multiplies of 7 is 357. The smallest multiple is?
    (A) 119   (B) 126   (C) 116   (D) 112

Space for rough work

38. Solve: $\dfrac{2y-3}{4} - \dfrac{3y-5}{2} = y + \dfrac{3}{4}$

(A) $y = \dfrac{2}{3}$ (B) $y = \dfrac{1}{2}$ (C) $y = \dfrac{3}{4}$ (D) $y = \dfrac{1}{3}$

39. Hari had 60 flowers. He offered some flowers in a temple and found that the ratio of the number of flowers remaining to that of flowers in the beginning is 3:5. Find the number of flowers offered by him in the temple
    (A) 36   (B) 24   (C) 12   (D) 48

40. If two adjacent angles of parallelogram are (5x-5)° and (10x+35)°, then the ratio of these angles is
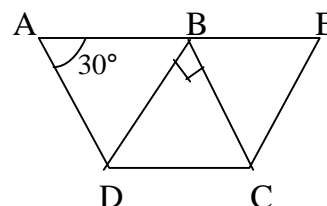   (A) 1:3   (B) 2:3   (C) 1:4   (D) 1:2

41. In the given figure, ABCD and BDCE are parallelograms with same base DC. If BC $BC \perp BD$, then $\angle BEC$
    (A) 60°
    (B) 30°
    (C) 150°
    (D) 120°

42. If the sides of regular hexagon are extended to form a star. Then the sum of angles of vertices of star is?
    (A) 720°   (B) 540°   (C) 360°   (D) 480°

43. The range of the data 30, 61, 55, 56, 60, 20, 26, 46, 28, 56 is
    (A) 26   (B) 30   (C) 41   (D) 61

44. Listed beside are the temperature in °C for 10 days. -6, -8, 0, 3, 2, 0, 1, 5, 4, 4. what is the mean temperature for that 10 days.
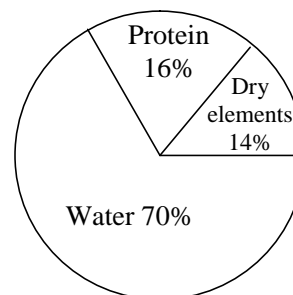   (A) 0.2°C   (B) -0.5°C   (C) -0.2°C   (D) 0.5°C

45. The following pie chart gives the distribution of constituents in the human body. The central angle of sector showing the distribution of water is
    (A) 216°
    (B) 108°
    (C) 252°
    (D) 208°

Space for rough work

Biology   Section - III

Straight Objective Type

Biology contains 45 multiple choice questions numbered 1 to 45. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

1. The process of separating grain from chaff is called
    (A) Threshing   (B) Weeding   (C) Sowing   (D) Winnowing

2. Which microbe is used for production of alcohol?
    (A) Yeast   (B) Plasmodium   (C) Lactobacillus   (D) Rhizobium

3. Barking deer is found in…………………………..National Park
    (A) Bandipur   (B) Kaziranga   (C) Periyar   (D) Gir

4. The conversion of nitrogen into nitrates is known as
    (A) Nitrogen fixation   (B) Ammonification   (C) Nitrate assimilation   (D) Nitrogen cycle

5. Malaria is caused by which type of microbe?
    (A) Bacteria   (B) Fungi   (C) Algae   (D) Protozoa

6. Mundanthurai sanctuary is found in……………………
    (A) Virudhunagar   (B) Nilgiris   (C) Nagapattinam   (D) Tirunelveli

7. Animals like horse, donkey that carry load are called
    (A) Drought species   (B) Load carrying animals
    (C) Dairy Animals   (D) Draught Animal

8. Which of the following disease is caused by a fungus?
    (A) Cholera   (B) Common cold   (C) Ringworm   (D) Dengue

9. Operation Rhino was undertaken in ………………………National Park
    (A) Dudhwa   (B) Gir   (C) Kaziranga   (D) Corbett

Space for rough work

10. The practice of growing a cereal crop and the pulse crop alternately in the same field in successive season is called
    (A) Crop rotation   (B) Harvesting   (C) Winnowing   (D) Threshing

11. Which of the following helps in making curd from milk?
    (A) Lactobacillus   (B) Plasmodium   (C) Yeast   (D) Salmonella

12. The famous Olive Ridley turtle breed near the coast of ………………………
    (A) Tamil Nadu   (B) Orissa   (C) Gujarat   (D) Kerala

13. Grains are separated from stalks by a process called…………….
    (A) Harvesting   (B) Threshing   (C) Winnowing   (D) Weeding

14. Penicillin was discovered by which scientist?
    (A) Edward Jenner   (B) Louis Pasteur   (C) Alexander Fleming (D) Robert Koch

15. Cheetahs became extinct in the year……………….
    (A) 1950   (B) 1940   (C) 1929   (D) 1919

16. Farmers store grains in a large scale in godown, silos and ……………
    (A) Metallic – bins   (B) Granaries   (C) Jute bags   (D) Open tanks

17. How much nitrogen is present in the atmosphere?
    (A) 78%   (B) 88%   (C) 68%   (D) 58%

18. Monal found in……………………… is one of the beautiful birds
    (A) Himachal Pradesh   (B) Chennai   (C) Gujarat   (D) Delhi

19. …………………..is the Rice Bowl of Tamil Nadu
    (A) Trichy   (B) Tirunelveli   (C) Thanjavur   (D) Madurai

20. The following is an antibiotic
    (A) Sodium bicarbonate   (B) Streptomycin   (C) Alcohol   (D) Yeast

21. A place in environment where an organism lives is ………………………
    (A) Home   (B) Resort   (C) Habitat   (D) Reservoir

Space for rough work

22. Carrier of malaria-causing protozoan is
    (A) Female Anopheles mosquito   (B) Cockroach
    (C) Housefly   (D) Butterfly

23. Weeds are the:
    (A) Main crop plants   (B) Insects and pests
    (C) Unwanted plants growing along the crop   (D) Chemical substances

24. Cutting of trees on large scale is called
    (A) Deforestation   (B) Reforestation   (C) Afforestation   (D) None of these

25. Combines are used for:
    (A) Sowing of seeds   (B) Harvesting the crops
    (C) Threshing   (D) Both Harvesting and threshing

26. The most common carrier of communicable disease is
    (A) Ant   (B) Housefly   (C) Dragonfly   (D) Spider

27. The species which are at the verge of the extinction
    (A) Endemic   (B) Extinct   (C) Endangered   (D) None of these

28. Which of the following is not a traditional method of irrigation?
    (A) Drip   (B) Moat   (C) Dhekli   (D) Rahat

29. The bread or idli dough rises because of
    (A) Heat   (B) Grinding
    (C) Growth of yeast cells   (D) Kneading

30. Restoring of destroyed forests by planting more and more trees is called
    (A) Deforestation   (B) Afforestation   (C) Reforestation   (D) None of these

31. Kharif crops are sown in
    (A) March, April   (B) May, June   (C) October, November (D) Any time

32. The process of conversion of sugar into alcohol is called
    (A) Nitrogen fixation   (B) Moulding   (C) Fermentation   (D) Infection

33. Fauna indicates for
    (A) Plants   (B) Animals
    (C) Both plants and animals   (D) None of these

Space for rough work

34. Wheat and gram belong to
    (A) Rabi crops   (B) Kharif crops   (C) Both of these   (D) None of these

35. Common cold is caused by which type of microbe?
    (A) Bacteria   (B) Virus   (C) Algae   (D) Fungi

36. Project Tiger was launched on
    (A) 1 April 1973   (B) 23 May 1973   (C) 21 September 1973 (D) 25 December 1973

37. Rearing and large scale production of fish is called
    (A) Pisciculture   (B) Aquaculture   (C) Fishiculture   (D) Mariculture

38. Sanctuary is a place where
    (A) Animals are protected   (B) Plants are protected
    (C) Office of forest department   (D) None of these

39. Antibiotics are effective against which of the following?
    (A) Bacteria   (B) Fungi   (C) Virus   (D) All of the above

40. Seed drill is used to
    (A) Sow the seeds   (B) Remove the weeds
    (C) Remove the pest   (D) Mix manure in the soil.

41. Part of earth which support the biodiversity is called
    (A) Biosphere   (B) Sanctuary   (C) Ecosystem reserve (D) Biotic community

42. Kanha National Park is in which state?
    (A) Madhya Pradesh   (B) Assam   (C) West Bengal   (D) Uttarakhand

43. The Red Data Book was originally prepared by which of the following?
    (A) IUCN   (B) WWF   (C) UNICEF   (D) UNO

44. Examples of kharif crops are
    (A) Wheat and maize   (B) Gram and maize   (C) Paddy and maize   (D) All of these

45. Which of the following animal is endemic of Pachmarhi Biosphere Reserve?
    (A) Flying squirrel   (B) Bengal tiger   (C) Elephant   (D) Gharial

Space for rough work

ALL THE BEST!
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