Deerwalk Aptitude Test (DAT)

Instruction
All questions are compulsory.
There are three major sections in this paper - English, Mathematics, IQ.
The marks wise distribution of each of the section is as follows

Section	Subject	Marks	Time [Suggested]
A	English	30	60 minutes
B	Mathematics	30	60 minutes
C	IQ	20	30 minutes

You are advised to spend the suggested time.
Please darken the most appropriate answer in the provided answer sheet.

SECTION A - ENGLISH

Food away from home (FAFH) has been associated with poor diet quality in many studies. It is difficult, however, to measure the effect of FAFH on diet quality since many unobserved factors, such as food preferences and time constraints, influence not just our choice of where to eat, but also the nutritional quality of what we eat.

Using data from 1994-96 and 2003-04, this study applies fixed-effects estimation to control for such unobservable influences and finds that, for the average adult, FAFH increases daily caloric intake and reduces diet quality. The effects vary depending on which meals are consumed away from home. On average, breakfast away from home decreases the number of servings of whole grains and dairy consumed per 1,000 calories and increases the percent of calories from saturated and solid fat, alcohol, and added sugar (So FAAS) in a day.

Dinner away from home reduces the number of servings of vegetables consumed per 1,000 calories for the average adult. Breakfast and lunch away from home increase calories from saturated fat and So FAAS on average more among dieters than among non-dieters. Some of the overall negative dietary effects decreased between 1994-96 and 2003-04, including those on whole grain, sodium, and vegetable consumption.

1. Which meal(s) eaten away from home have worse results for dieters than for non-dieters?

a. The article doesn't state which meal is the worse for non-dieters.
b. Dinner eaten away from home is worse because people consume fewer whole grains and vegetables.
c. Breakfast eaten away from home is worse because it increases the percent of calories from saturated and solid fat, alcohol, and added sugar (So FAAS) in a day.
d. Breakfast and lunch eaten away from home are worse because they increase the percent of calories from saturated fats.

2. Why is it difficult to measure the effect of food away from home on diet quality?

a. People eat out too much, so it is not possible to collect accurate data.
b. Researchers are unable to assess the nutritional quality of people's diets.
c. Peoples' food preferences are too complex and may even be immeasurable.
d. Too many unknown variables affect the data

3. Which statement is not a detail from the passage?

a. Eating breakfast away from home can result in an increase in fatty protein consumption.
b. Eating food away from home is connected to bad food choices.
c. In general, people who eat breakfast away from home consume more calories.
d. Eating dinner away from home results in less vegetable consumption.

4. What is the meaning of the word "associated" in the first paragraph?

a. specialized
b. predated
c. connected
d. obfuscated

A nanometer is a billionth of a meter. A DNA molecule is 2 nanometers in diameter. Protein molecules are about 10 nanometers in diameter. A human hair is 100,000 nanometers in diameter. But what is a nanometer and how does it relate to technology? Nanotechnology is defined as the understanding and control of matter at dimensions of roughly 1 to 100 nanometers, a scale at which unique properties of materials emerge that can be used to develop novel technologies and products.

At the nanoscale, the physical, chemical, and biological properties of materials differ from the properties of matter either at smaller scales, such as atoms, or at larger scales that we use in everyday life such as millimeters or inches. Nanotechnology involves imaging, measuring, modeling, and manipulating matter only a few nanometers in size. Gold nanoparticles are made of the same material as in jewelry. But when light interacts with particles of gold, different colors are reflected. The different colors can be used in simple medical tests to indicate infection or disease. Metals such as copper become extremely rigid at the nanoscale, rather than bendable as in copper wires seen in everyday use.

5. What is the major difference between matter at the nanoscale and matter at larger scales such as millimeters or inches?

a. At the nanoscale, metals are bendable, and at larger scales they are rigid.
b. Matter has different and special characteristics at the nanoscale.
c. At the nanoscale, matter has the same properties as matter at the atomic level.
d. There is no difference

6. Which claim from the passage best describes the benefits of nanotechnology?

a. Scientists can develop novel technologies and products
b. Nanotechnology is defined as the understanding and control of matter at dimensions of roughly 1 to 100 nanometers.
c. The different colors can be used in simple medical tests to indicate infection or disease.
d. Unique properties of materials emerge

7. What is the author's primary purpose in writing this essay?

a. to explain how to utilize the nanoscale
b. to review the conversion between the nanoscale and nanotechnology
c. to advocate for the usage of more nanotechnology
d. to describe nanotechnology and what it is

Neurologists and biological psychologists have witnessed a sharp increase in the knowledge and understanding of particular structures of the brain over the past two decades. As technology becomes ever more advanced, scientists are able to isolate the functions of even small regions of the human brain. One noteworthy discovery is the role of the amygdala in human fear and aggression.

The amygdala, a small, almond-shaped conglomerate, is just one part of the limbic system. Located at the very center of the brain, the limbic system is the core of our 'emotional brain;' each individual structure in the limbic system is somehow connected to an aspect of human emotion. Scientists have found that electrode stimulation of the amygdala can elicit extreme and aggressive acts. Patients or experimental subjects who experience this utter rage and fearlessness have no rational foundation for their reaction.

In other words, this aggression is wholly attributable to electrode stimulation. On the other hand, patients with trauma or damage to this structure exhibit a complete absence of aggression. Researchers find that no amount of poking, prodding or harassment will evoke even remotely aggressive responses from these subjects.

8. The author suggests that persistent passivity and imperturbability may be a direct result of which of the following?

a. Drug-induced stimulation of the amygdala.
b. A stroke that resulted in severe tissue damage in the limbic system.
c. Encephalitis as a result of head trauma.
d. Activation of a strategically implanted electrode in a patient's amygdala

9. Which statement is not listed as a detail within the passage?

a. Electrode stimulation of the amygdala can elicit extreme aggressive acts.
b. Scientists are able to isolate the functions of even small regions of the human brain.
c. Typically temperamental rhesus monkeys with amygdala damage are completely imperturbable.
d. Subjects who experience this utter rage and fearlessness have no rational foundation for their reaction.

10. What is the main idea of the passage?

a. The human brain is as complex as it is mysterious.
b. Patients with damaged amygdalas are less aggressive than individuals with healthy ones.
c. Electrode stimulation is a valuable tool for researchers who study the human brain.
d. Scientists have learned a lot about how the amygdala affects human emotion.

SENTENCE COMPLETION

The sentence(s) below has one or more blanks. Beneath each sentence(s) are four words or sets of words. Choose the word or set of words that best fits the meaning of the sentence as a whole.

11. He believed that in order to _____ the problem fully, he would need to understand all of its _____.

a. Address: intricacies
b. Comprehend: extreme
c. Embrace: nuances
d. Experience: thoughts

12. The author's novel was _____ but she managed to develop numerous _____ fully and enjoyably by its end.

a. long-winded: chapters
b. uninsightfu: answers
c. thought-provoking: storylines
d. brief: characters

13. The rumors were _____ and she welcomed the opportunity to _____ them.

a. True: repudiate
b. Believable: enjoy
c. Pertinent: demystify
d. Odious: refute

14. I was sorry to see her in that _____, she looked so _____.

a. Position: pensive
b. Situation: arbitrary
c. State: demure
d. Condition: despondent

15.The disarray was _____; the office had to be closed for the day so all the furniture could be placed where it belonged, papers could be re-filed and a general cleaning done.

a. contemptible
b. trifling
c. inconsequential
d. severe

WORD ANALOGIES

Select the pair that matches with the words given.

16.ANARCHIST : LAWS

a. federalist : union
b. insurgent : rebellion
c. despot : leadership
d. pacifist : war

17.DEADPAN : EMOTION

a. mobile : movement
b. petty : openness
c. ambivalent : precision
d. lethargic : energy

18.ETERNAL : DURATION

a. harmonious : music
b. temporary : time
c. dry : water
d. omnipotent : power

19.SLUR : SPEECH

a.   crack : pottery
b.   scribble : writing
c.   refresh : sleep
d.   chirp : bird

20.OIL : VEGETABLE

a.   chocolate : cocoa
b.   hive : house
c.   bird : insect
d.   sunlight : plant

21. I enabled her ……. do the work.

a. with
b. for
c. in
d. to

22. We are accustomed …..getting up early.
a. at
b. for
c. to
d. in

23. He is tired ….walking for the whole day.
a. from
b. of
c. for
d. at

24. He is born ……rich Parents.
a. from
b. to
c. of
d. by

25. I invited all the friends……. her.
a. with
b. for
c. to
d. save

SECTION B – MATHEMATICS

1. If i is an imaginary number, then the value of i^2 is ………..
    a. 1
    b. -1
    c. 0
    d. None of them.

2. A rational number between $\frac{1}{4}$ and $\frac{1}{5}$ is ………..
    a. $\frac{9}{40}$
    b. $\frac{19}{80}$
    c. $\frac{39}{160}$
    d. $\frac{9}{20}$

3. The absolute value of $3 + i\sqrt{3}$ is ………
    a. $4\sqrt{3}$
    b. $\sqrt{3}$
    c. $2\sqrt{3}$
    d. $3\sqrt{3}$.

4. Dogs having two tails are an example of …………
    a. A null set.
    b. A void set
    c. An empty set
    d. All of above.

5. Let A = {2,4,6,8,10,12,14} be a set of even numbers less than 16. The cardinal numbers of the set is…………
    a. 14
    b. 6
    c. 7
    d. 12.

6. Which one of the following is an example of a linear algebraic function :
    a. f(x) = mx +c.
    b. f(x) = ax^2 +bx +c.
    c. f(x)= ax^3
    d. f(x) = ax^2 + 2hxy +by^2.

7. If x+2,3x and 4x +1 are in arithmetic progression, then x = ……
    a. 5
    b. 4
    c. 3
    d. 2.

8. Which one of the following is the first term of a geometric sequence whose fifth term is 243 and the common ratio is 3 ?
   a. -1
   b. 2
   c. 3
   d. 1.
   e.

9. How many arrangements can be made out of the letters of the word "COMMITTEE" taken all at a time?
   a. 45360
   b. 53640
   c. 36540
   d. 63540

10. The value of C(10,8) is ……….
    a. 42
    b. 43
    c. 44
    d. 45.

11. If all the leading diagonal elements of a matrix are one and the remaining all elements are zero, then the matrix is called ………….
    a. A null matrix
    b. A scalar matrix.
    c. A diagonal matrix
    d. A unit matrix.

12. Lit A = $\begin{bmatrix} 7 & 8 & 9 \\ 10 & 11 & 12 \\ 13 & 14 & 15 \end{bmatrix}$, be a matrix. Then which element is a_{13} ?
    a. 9
    b. 12
    c. 15
    d. None of them.

13. The inverse of matrix exists, If it is a ……..
    a. Rectangular matrix
    b. Singular matrix
    c. Nonsingular matrix
    d. All of above.

14. The value of the determinant $\begin{vmatrix} \frac{1}{a} & bc & 1 \\ \frac{1}{b} & ca & 1 \\ \frac{1}{c} & ab & 1 \end{vmatrix}$ is……
    a. ab
    b. bc
    c. ca
    d. 0

15. The values of x and y in the system of equations, y=3x and x- y = 2 are.......
    a. X= -1 and y = -3
    b. X= 1 and y=3
    c. X= -3 and y= 1
    d. X= 2 and y=3

16. In the equation $\frac{x}{2} + \frac{y}{3} = 4$, the value of 3x +2y is ....
    a. 25
    b. 24
    c. 26
    d. 28

17. Equations 3x -2y = 1 and 4y – x = 3 are pair of straight lines in a xy plane. The point of intersection of the lines is............
    a. (2,2)
    b. (3,3)
    c. (1,1)
    d. None of the above.

18. P(2,2) and Q(8,12) are one of the opposite corner of a diagonal of a parallelogram. What is the mid – point of the diagonals of the parallelogram?
    a. (5,7)
    b. (7,5)
    c. (5,0)
    d. (0,5).

19. In what ratio is the line joining the points (-1,1) and (5,7) divided by the point (2,2) ?
    a. 1:2
    b. 1:1
    c. 2:2
    d. 3:2

20. Which one of the following represents the standard equations of straight line in normal form :
    a. Y = mx +c
    b. $\frac{x}{a} + \frac{y}{b} = 1$
    c. $x\cos\alpha + y\sin\alpha$ = p
    d. Y- y_1 = m (x – x_1).

21. The derivative of x^8 with respect to x^3 is ......
    a. $\frac{8}{3}x^3$
    b. $\frac{8}{3}x^4$
    c. $\frac{8}{3}x^5$
    d. $\frac{8}{3}x^6$.

22. The $\frac{dy}{dx}$ for the implicit function $x^2 + y^2 = a^2$ is...........
    a. $\frac{-x}{y}$
    b. $\frac{x}{y}$
    c. $\frac{y}{x}$
    d. $\frac{-y}{x}$.

23. The integration of $\int \frac{ax^2+bx+c}{x^2}$ dx, is.....
    a. ax +blogx + constant
    b. x+logx+ constant
    c. bx +alogx+ constant
    d. None of the above.

24. The value of the definite integration $\int_0^2 x^3 dx$, is.........
    a. 4
    b. 5
    c. 6
    d. 8

25. What is the median marks of 6 students:
    Marks: 54   38 ,   40,   45 ,   47 ,   50.
    a. 45
    b. 46
    c. 47
    d. 50

26. The variant values which divide the whole observations into 10 equal parts are called........
    a. Percentiles
    b. deciles
    c. median
    d. Quartiles.

27. The model value of the distribution

Class	5-10	10-15	15-20	20-25	25-30	30-35	35-40
Frequency	5	7	10	18	16	4	1

Is..........
    a. 25
    b. 24
    c. 26
    d. 28

28. The co-efficient of range of the data :
25, 28, 32, 36, 40, 44, 45, 50   is…….
   a.   1
   b.   1.2
   c.   0.35
   d.   0.33

29. From a well-shuffled deck of 52 cards, a card is drawn at random. What is the probability that the card drawn is a red card?
   a.   0.5
   b.   0.25
   c.   0.05
   d.   1

30. By selling 150 radios, a shopkeeper gains the selling price of 30 radios. What is his gain percent?
   a.   30%
   b.   25%
   c.   20%
   d.   35%

SECTION C – IQ

1. (01+02+03+……….+50) is equal to:

a.   1250
b.   1275
c.   2525
d.   2975

2. Which of the following ratios is greatest?

a.   7 :15
b.   15 :23
c.   17 :25
d.   21 :29

3. The ages of Raju and Biju are in the ratio 3:1. Fifteen years hence, the ratio will be 2:1. Their present ages are:

a.   30yrs, 10yrs
b.   45 yrs, 15 yrs
c.   21 yrs, 7 yrs
d.   60yrs, 20yrs

4. From the four positions of a dice given below, find the color which is opposite to yellow?
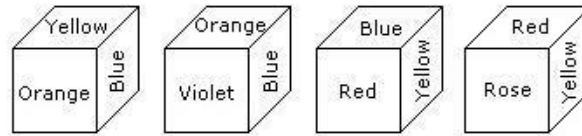
a. Violet
b. Red
c. Rose
d. Blue

5. Two positions of a dice are shown below. Which number will appear on the face opposite to the face with the number 5?
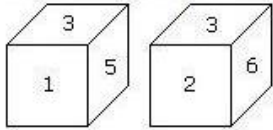
a. 2/6
b. 2
c. 6
d. 4

6. Introducing a man to her husband, a woman said, "His brother's father is the only son of my grandfather." How is the woman related to this man?

a. Mother
b. Aunt
c. Sister
d. Daughter

7. If DELHI is coded as 73541 and CALCUTTA as 82589662, how can CALICUT be coded?

a. 5279431
b. 5978213
c. 8251896
d. 8543691

8. In a certain code language, if the value of 'BLOCK' = 13 and 'CURTAIN' = 27, then what is the value of the word 'SCIENCE'?

a. 32
b. 34
c. 36
d. 38

9. If today is Thursday, after 730 days which will be the day of the week?

a. Thursday
b. Friday
c. Saturday
d. Monday
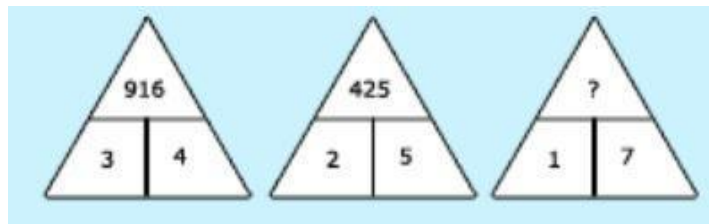
10. How many triangles are there in the below diagram?
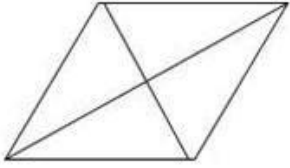
a. 4
b. 6
c. 8
d. 10

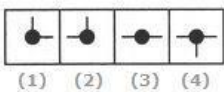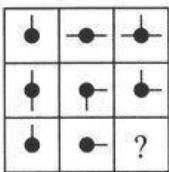11. A single discount equivalent to a series of 30%, 20%, and 10% is

a.   50%
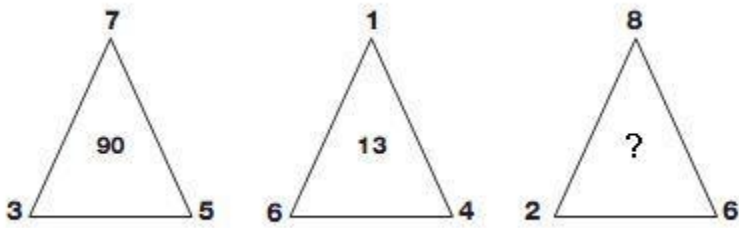b.   49.6%
c.   49.4%
d.   51%

12. Fill in the empty space.

a.   139
b.   149
c.   159
d.   169

13. Select a suitable figure from the four alternatives that would complete the figure matrix

(1)   (2)   (3)   (4)

a.   1
b.   2
c.   3
d.   4

14. Which number replaces the question mark?

a. 60
b. 70
c. 80
d. 90

15. A father said to his son, "I was as old as you are at the present at the time of your birth". If the father's age is 38 years now, the son's age five years back was:

a. 14 years
b. 19 years
c. 33 years
d. 38 years

16. A is two years older than B who is twice as old as C. If the total of the ages of A, B and C be 27, the how old is B?

a. 7
b. 8
c. 9
d. 10

17. A sum of money becomes triple itself in 16 years. In how many years will it become 5 times at the same rate?

a. 32
b. 15
c. 27
d. 30

18. The compound interest on Rs.30,000 at 7% per annum is Rs. 4347. The period (in years) is:

a. 2
b. 2 ½
c. 3
d. 4

19. In a dairy farm, 40 cows eat 40 bags of husk in 40 days. In how many days one cow will eat one bag of husk?

a. 1

b. $\frac{1}{40}$

c. 40

d. 80

20. What is the probability of getting a sum 9 from two throws of a dice?

a. $\frac{1}{6}$

b. $\frac{1}{8}$

c. $\frac{1}{10}$

d. $\frac{1}{12}$