

Deerwalk Institute of Technology

Deerwalk Aptitude Test (DAT) – BCA - Model Question - Class of 2028

Instruction

All questions are compulsory.

There are three major sections in this paper - English, Mathematics, and IQ. Each question carries 1 mark.

The marks wise distribution of each of the section is as follows:

Section	Subject	Marks	Time [Suggested]
A	English	40	40
B	Mathematics	40	70
C	IQ	20	35

-Section A– English

Reading Comprehension

(This passage is extracted from an international economics magazine.)

In 1978, economist Thomas Robert Malthus stated in his 'Essay on the Principle of Population' that population increases in a geometric ratio, while the means of subsistence increases in an arithmetic ratio.

However, Malthus's dire prediction of a precipitous decline in the world's population has not come to pass. The miscalculations in what has come to be known as the Malthus Doctrine are partly due to Malthus's inability to foresee the innovations that allowed vast increases in worldwide wheat production.

In the late nineteenth century, the invention of the tractor staved off a Malthusian disaster. While the first tractors were not particularly powerful, the replacement of animals by machinery meant that land that had been devoted to hay and oats could now be reclaimed for growth of crops for human consumption. Nevertheless, the Malthusian limit might still have been reached if crop yield had not been increased.

A natural way to increase crop yield is to supply the soil additional nitrogen. In 1909, chemist Fritz Haber succeeded in combining nitrogen and hydrogen to make ammonia, the white powder version of which added to the soil, improves wheat production. Haber nitrogen, however, was not widely used until later in the twentieth century, largely due to farmers' resistance to spreading an unnatural substance on their crops. Haber's invention had a further drawback: if applied in incorrect quantities, the wheat crop would grow taller and thicker, eventually toppling over and rotting.

Interestingly, in the late twentieth century the discovery of genetic engineering, which provides a means of increasing rice and maize production, met with equal resistance, this time from the environmental movement. Even without direct genetic engineering, it is likely that science will discover new methods to improve agricultural production.

1. According to the passage, which of the following is true about Haber nitrogen?
 - a. Haber nitrogen is more effective at increasing yield of wheat crops than that of maize or oats.
 - b. Undesired effects can result from the application of surplus quantities of Haber nitrogen.
 - c. Haber nitrogen may not be effective if applied at an improper time in wheat's growth cycle.
 - d. Farmers were quick to adopt Haber nitrogen because it made their crops grow taller and thicker.
2. In the second paragraph, the phrase 'staved off' most nearly means:
 - a. Supported
 - b. Speeded up
 - c. Saved
 - d. Risked
3. What was the dark prediction speculated by the economist, Malthus?
 - a. World's population will continue to grow
 - b. World's population will decrease sharply
 - c. There will be mismatch between geometric and arithmetic ratio
 - d. There will be innovations to withhold the increasing population
4. The final sentence of the passage offers:
 - a. A synthesis of the ideas given above
 - b. A consolation on future prediction
 - c. A warning for the future
 - d. A conclusion for the whole passage
5. According to the passage, the three inventions of the tractor, nitrogen and genetic engineering were initially taken as:
 - a. The first invention was welcomed but two others were rejected
 - b. The first two inventions were welcomed but the last one was rejected
 - c. All three inventions were welcomed
 - d. All three inventions were rejected

6. The passage implies all of the following except:
- a. World food production has kept pace with world population growth.
 - b. Technological innovation is one factor that allowed for an increase in crop production.
 - c. A Malthusian disaster would have been ensured if it were not for the invention of genetic engineering.
 - d. Farmers are not the only group that has opposed artificial efforts to increase crop yield.
7. Initially, the Haber nitrogen was taken as:
- a. An exciting invention for the growth of the crops
 - b. A harmful substance to their crops
 - c. A substance that could have much potentiality
 - d. An invention with appreciation
8. The content of the given passage is:
- a. Narrative
 - b. Descriptive
 - c. Expository
 - d. Persuasive
9. Given in the first paragraph, the word 'doctrine' is closest in meaning to:
- a. Principle
 - b. Assumption
 - c. Threat
 - d. Guidance
10. In the given passage, there is the sequence of:
- a. Logic-1, logic-2, logic-3 and conclusion
 - b. Introduction—supporting details—and conclusion
 - c. Introduction of the problem—logics—conclusion
 - d. Introduction of the problem—logic-1, logic-2, and logic-3.

Sentence Completion

11. Despite whatphilosophies of child-rearing suggest, there is no imperative that the day-to-day action of raising a child be simple, unambiguous, and unchanging. It ensures that life follows philosophy.
- a. Aggressive
 - b. Random
 - c. Shameless
 - d. Systematic
12. All the greatest chess players in the world know that it is folly to bewhen facing a formidable opponent, as stubbornness will almost surely lead to mistakes that force a player toto the prevailing strategy of their opponent.
- a. Finicky—dissent
 - b. Obdurate—capitulate
 - c. Vituperative—repudiate
 - d. Flexible—dismiss
13. Although pirating software, such as borrowing a friend's copy of an installation CD or downloading software from unapproved sources is, many people continue to do so, almost as if they were unaware that such acts amount to theft.
- a. Illegal—unabashedly
 - b. Uncommon—savagely
 - c. Difficult—sensibly
 - d. Easy—nicely
14. Having squandered his life's savings on unprofitable business ventures, the entrepreneur was forced to live in squalor.
- a. Former
 - b. Unlikely
 - c. Insolvent
 - d. Eccentric

15. Owing to a combination of its proximity andatmosphere, Mars is the only planet in our solar system whose surface details can be discerned from Earth.
- a. Viscous
 - b. Estimable
 - c. Copious
 - d. Meager
16. Long term governmentare known as gild-edged securities.
- a. Bonds
 - b. Securities
 - c. Shares
 - d. Equities
17. Futures, options and otherexist in order that companies and individuals may attempt to diminish the effects of future changes in commodity, asset prices, exchange rates and interest rates.
- a. Derivatives
 - b. Divisions
 - c. Deviations
 - d. Denunciations
18. Speculations, anticipating currency appreciations or, or interest rate movements, are active in currency future markets.
- a. Derivations
 - b. Hedging
 - c. Depreciations
 - d. Overestimations
19.exists when products are homogenous, and there are a great many firms too small to have any influence on the market price.
- a. Monopoly
 - b. Monopsony
 - c. Monolithic competition
 - d. Monopolistic competition

20. When there is high unemployment during a recession, should the government
in the economy to create jobs?
- a. Intervene
 - b. Urge
 - c. Stimulate
 - d. Encourage

Sentence Completion

21. Democracy: government:: meritocracy:
- a. monarchy
 - b. aristocracy
 - c. bureaucracy
 - d. leadership
22. Hypothesis is to experiment as thesis is to:
- a. research
conclusion
 - c. analysis
 - d. evidence
23. Shakespeare is to literature as Picasso is to:
- a. painting
 - b. sculpture
 - c. architecture
 - d. photography
24. Dirge: Funeral
- a. chain: letter
 - b. bell: church
 - c. telephone: call
 - d. jingle: commercial

25. Depressed: Sad

- a. neat: considerate
- b. towering: cringing
- c. rapid: plodding
- d. exhausted: tired

26. Bristle: Brush

- a. arm: leg
- b. recline: chair
- c. stage: curtain
- d. key: piano

27. Rain: Drizzle

- a. swim: dive
- b. hop: shuffle
- c. walk: run
- d. run: jog

28. Pulsate: Throb

- a. tired: sleep
- b. walk: run
- c. examine: scrutinize
- d. ballet: dancer

29. Cobbler: Shoe

- a. jockey: horse
- b. contractor: building
- c. mason: stone
- d. cowboy: boot

30. Umbrage: Offense

- a. confusion: penance
- b. infinity: meaning
- c. decorum: decoration
- d. elation: jubilation

Grammar and Vocabulary

31. 'The rest is history' means:
- a. history takes rest
 - b. known to everyone
 - c. avoid historical facts
 - d. history repeats itself
32. 'Warm as toast' means:
- a. very hot
 - b. very fresh
 - c. lukewarm
 - d. cold
33. 'To smell a rat' means:
- a. to suspect a foul play
 - b. to show cleverness
 - c. to investigate in detail
 - d. to start a fight
34. What(happen) if Pandora had not opened the box?
- a. happened
 - b. had happened
 - c. happen
 - d. would have happened
35. The collective noun for horses is:
- a. a flock of horses
 - b. a herd of horses
 - c. a stud of horses
 - d. a troop of horses
36. A study of aging people is called:
- a. demography
 - b. Numismatics
 - c. gerontology
 - d. ornithology

37. He is a studentTribhuvan University.

- a. on
- b. in
- c. at
- d. of

38. Sincere people abidethe rules and regulations.

- a. by
- b. of
- c. at
- d. on

39. Let's have lunch together,? Supply the correct question tag.

- a. will you?
- b. shall we?
- c. won't you?
- d. do we?

40. I replied that I was working. The question was:

- a. What were you doing?
- b. What you are doing?
- c. What are you doing?
- d. What had been doing?

-Section B– Mathematics

1. For what value of k, the equation $x^2+2(k+2)x+9k=0$ has equal roots?

- a. 1or4
- b. 1or3
- c. 2or3
- d. 2or1

2. The function given by $f(x)=x\sin x+\cos x$ is a

- a. odd
- b. even
- c. both
- d. neither

3. The sum of a matrix with it's transpose is

- a. null
- b. Row
- c. Symmetric
- d. Skew symmetric

4. The value of $\sqrt{-16} \cdot \sqrt{-1}$ is equal to
 a. 1 b. -2 c. 3 d. -4
5. The probability of getting two sundays on a leap year is
 a. $\frac{1}{7}$ b. $\frac{4}{15}$ c. $\frac{3}{5}$ d. $\frac{2}{7}$
6. The equation of straight line parallel to $2x+3y-9=0$ and passes through origin is
 a. $2x-3y+5=0$
 b. $2x+3y-5=0$
 c. $2x+3y=0$
 d. $2x-3y=0$
7. The number of terms in the expansion $(a + b)^{12}$ is
 a. 13 b. 11 c. 12 d. 10
8. $A=\{x : 0 \leq x \leq 4\}$ and $B=\{x : 2 \leq x \leq 7\}$ then $A-B$ is
 a. $\{2, 7\}$ b. $\{0, 1\}$ c. $\{0, 7\}$ d. $\{0, 7\}$
9. The sum of intercepts of the function given by $3x+4y = 12$ is
 a. 5 b. 6 c. 7 d. 8
10. The derivative of $\sin x$ with respect to $\cos x$ is
 a. $\tan x$ b. $\cot x$ c. $-\tan x$ d. $-\cot x$
11. The 10% of 20% of 200. a. 5 b. 4 c. 3 d. 2
12. The value of $\int_0^1 \frac{2x}{x^2+1} dx$ is
 a. $\log 2$ b. 1 c. $\log 3$ d. $0 \lim_{x \rightarrow 0}$
13. The value of $\tan x$ is equals to

14. The function $f(x) = x^2 + 5$ on the interval $[2, 3]$ is

- a. decreasing b. constant c. increasing d. Neither

15. The inverse of the function given by $f(x) = 2x - 9$ is

- a. $x + 9$ b. $2x + 9$ c. $9 + 2x$ d. $x + 2$

16. What is the ratio of the derivative of $\log_5 x$ to the derivative of $\log_7 x$?

- a. 0 b. 1 c. 2 d. 3

17. What is the probability of getting two heads on two tosses of a coin?

- a. $\frac{2}{4}$ b. $\frac{1}{4}$ c. $\frac{3}{4}$ d. $\frac{4}{3}$

18. If variance is 25 and mean is 5 then coefficient of variation is a. 4.5% b. 5.4% c. 7%
d. 1%

19. The slope of tangent of $x^2 + y^2 = 9$ at the point $(2, 1)$ is a. 1 b. 2 c. -1 d. -2

20. If a line is parallel to x axis then it's slope is a. 0 b. 1 c. 2 d. -1

21. The area of an equilateral triangle whose one side is 4cm is

- a. $2\sqrt{3}$ b. $3\sqrt{3}$ c. $4\sqrt{3}$ d. 9

22. If p and q are two different prime numbers then their LCM is equals to

- a. $P+q$ b. pq c. $p-q$ d. $p\sqrt{q}$

23. If $\cos A = \frac{5}{3}$, then $\tan A$ is equals to

- a. $\frac{4}{3}$ b. $\frac{3}{4}$ c. $\frac{4}{5}$ d. $\frac{1}{3}$

24. A person took a loan of Rs 12,000 for three months at the rate of 8% per annum, the amount he returns is

- a. 120 b. 150 c. 240 d. 420

25. The zeros of a quadratic polynomial $x^2 - 5x + 6$ are

- a. 1 or 2 b. 3 or 2 c. -2 or -3 d. 5 or 1

26. If $5x + 13 = 31$, what is the value of $\sqrt{5x + 3}$?

- a. 4 b. 5 c. 6 d. 7

27. If $p + q = r$, then what is the average value of p , q and r ?
 a. $\frac{r}{3}$
 b. $\frac{p+q+r}{3}$
 c. $\frac{2}{3}r$
 d. $\frac{r}{2}$
28. Last year Hari was 4 feet tall, and this year he is 5 feet tall. What is the percent increase of his height?
 a. 10%
 b. 15%
 c. 20%
 d. 25%
29. The cost of 6 pens is equal to the cost of the 10 pencils. If the cost of 4 pencils is Rs. 120, then what is the cost of 4 pens?
 a. 100
 b. 200
 c. 300
 d. 400
30. if the selling price of 10 pens is the same as the cost price of 12 pens then gain per cent is
 a. 2%
 b. 12%
 c. 20%
 d. 25%
31. A function $f(x)$ is said to be an odd function if
 a. $f(x) = f(-x)$
 b. $f(x) = -f(x)$
 c. $f(x) = kf(x)$
 d. $f(-x) = -f(x)$
32. The area of an equilateral triangle with one side p is
 a. $\sqrt{3} \cdot p^2$
 b. $\frac{\sqrt{3}}{4} p^2$
 c. $\frac{\sqrt{3}}{4} p$
 d. $\sqrt{3} \cdot p$
33. If 6 is subtracted from the cube of a number and the result is 21, then what is the value of that number?
 a. 2
 b. 3
 c. 4
 d. 5
34. What is the correct value of $\frac{5^4 - 5^3}{4}$ is equal to which of the following.
 a. 5^3
 b. 5^2
 c. $\frac{2}{3}$
 d. $\frac{3}{4}$
35. Roots of the equation $ax^2+bx+c=0$ are identical if
 a. $b^2-4ac<0$
 b. $b^2-4ac>0$
 c. $b^2-4ac=0$
 d. all of these
36. Which of the following point does not lie on the region $x+y\leq 10$?
 a. (0,0)
 b. (1,8)
 c. (2,9)
 d. (1,9)

37. An article was bought at Rs. 1000 after 20% discount. If the discount is only 10% what would be the price of the article?
 a. Rs.1200 b. Rs.1250 c. Rs.1125 d. Rs.1100
38. The scale of probability is given by
 a. $0 \leq p \leq 1$ b. $0 < p < 1$ c. $0 \leq p < 1$ d. $0 < p \leq 1$
39. The slope of line perpendicular to x-axis is
 a. 0 b. 1 c. -1 d. ∞
40. If 4 is added to the y intercept of the equation $4x+y=9$, the results
 a. 0 b. 1 c. 2 d. 3

-Section C– IO

1. Tanya is older than Eric.
 Cliff is older than Tanya.
 Eric is older than Cliff.
 If the first two statements are true, the third statement is
 a. True b. False c. Invalid question d. Uncertain
2. What is the 100th letter of the series ABBCCDDDDD ---?
 a. I b. J c. K d. N
3. After covering Five-eighth of my Journey, I find that I have travelled 60 km. How much Journey is left?
 a. 40 b. 80 c. 36 d. 27
4. If today is Saturday, what day will it be in 500 days?
 a. Friday b. Saturday c. Sunday d. Tuesday
5. How many integers are there between 100 and 1000 all of whose digits are odd?
 a. 90 b. 100 c. 125 d. 150
6. Hari, Kiran and Ganesh have a total of Rs. 390. Hari has 5 times as much as Ganesh, and Kiran has $\frac{3}{4}$ as much as Hari. How much money does Kiran have?
 a. 40 b. 78 c. 150 d. 200

7. If BIRD is written as 2-9-18-4, then how is CROW written in that code?
- a. 3-17-26-22
 - b. 3-18-15-23
 - c. 3-19-16-24
 - d. 3-18-16-23
8. Rima ranks ninth from the top and thirty eighth from the bottom in a class. How many students are there in the class?
- a. 46
 - b. 47
 - c. 48
 - d. 49
9. In January, the value of a stock increased by 25%, and in February, it decreased by 20%. How did the value of the stock at the end of February compare with its value at the beginning of January?
- a. It was less
 - b. It was the same
 - c. It was 5% greater
 - d. It was more than 5% greater
10. If BUTWAL is coded UWLUWL, TANSEN is coded as ASNASN, then how is POKHARA written in that code?
- a. OHRPKAA
 - b. OHAOHA
 - c. PAKHOR
 - d. KAPKAP
11. It takes Martin $\frac{1}{2}$ hour to get washed and changed before school. It takes him $\frac{1}{4}$ of an hour to go downstairs and eat breakfast. It takes him 1 and $\frac{1}{4}$ hours on the bus to school. How much time does it take Martin to get ready and get to school?
- a. 2 hours
 - b. $1\frac{1}{2}$ hours
 - c. $2\frac{1}{2}$ hours
 - d. $1\frac{3}{4}$ hours
12. Which number should replace the question mark in the following sequence? 2, 6, 12, 20, ?
- a. 30
 - b. 28
 - c. 26
 - d. 32
13. In a certain code, 'CAT' is written as '3120'. How is 'DOG' written in that code?
- a. 4157
 - b. 4175
 - c. 4517
 - d. 4571
14. All roses are flowers. Some flowers are red. Therefore, some roses are red. This conclusion is:
- a. True
 - b. False
 - c. Uncertain
 - d. Cannot be determined

15. Which of the following is not a primary color in the RGB color model?
a. Red b. Green c. Blue d. Yellow
16. A cube has all its faces painted red. If it is then cut into 27 smaller cubes of equal size, how many of these smaller cubes will have exactly two faces painted?
a. 0 b. 8 c. 12 d. 24
17. Which of the following phenomena is responsible for the reddish appearance of the Sun at sunrise and sunset?
a. Reflection of light
b. Refraction of light
c. Diffraction of light
d. Scattering of light
18. Which of the following protocols is used to securely browse a website?
a. HTTP b. FTP c. HTTPS d. SMTP
19. Which device is used to connect multiple computers within a local area network (LAN)?
a. Router b. Modem c. Switch d. Firewall
20. Which of the following is an IP address?
a. 192.168.0.1
b. www.example.com
c. 08:00:27:00:9F:68
d. FTP

***** END OF TEST *****

Answer Key

English

1. b	2. c	3. b	4. b	5. a
6. c	7. b	8. c	9. a	10. d
11. d	12. b	13. a	14. c	15. d
16. a	17. a	18. c	19. a	20. a
21. b	22. a	23. a	24. b	25. d
26. d	27. d	28. c	29. b	30. b
31. b	32. c	33. a	34. d	35. c
36. c	37. c	38. a	39. b	40. c

Mathematics

1. a	2. b	3. c	4. d	5. d
6. c	7. a	8. b	9. c	10. d
11. b	12. d	13. d	14. c	15. a
16. b	17. b	18. d	19. d	20. a
21. c	22. b	23. a	24. c	25. b
26. d	27. c	28. d	29. b	30. c
31. d	32. a	33. b	34. a	35. c
36. d	37. c	38. a	39. d	40. a

IQ

1. b	5.c	9.b	13.b	17.d
2. d	6.c	10.a	14.c	18.c
3.c	7.b	11.a	15.d	19.c
4.d	8.a	12.a	16.c	20.a