

JC CAT Structure and Sample Questions

JC CAT is an objective type test, which ascertains the aptitude of the candidates to do Post Graduate Programme in Management. JC CAT is designed to identify the candidates' potential. There are 200 questions in JC CAT and the duration for the same is 2 hours 30 minutes. JC CAT has five sections. Each section carries 40 questions and each question carries one mark. There is negative marking for wrong answers. The structure of JC CAT is given below:

Section Name	No. of Questions
Language Comprehension	40
Mathematical Skills	40
Data Analysis & Sufficiency	40
Intelligence & Critical Reasoning	40
Indian & Global Environment	40

MARKS ALLOCATION

Correct Answer carries 1 Mark

Incorrect Answer carries 1/4th Negative Mark

Sample Questions

A few sample questions are given below for guidance. These samples do not necessarily indicate either the types or the difficulty levels of questions that can be in the actual test. In general the preparation standard expected is that of a graduate from an Indian University. However, the knowledge level required for attempting the section on Mathematical Skills is that of 10th standard under Central Board of Secondary Education.

Section 1

Language Comprehension

Directions for Q.1 to Q.7. Read the following passages and answer the questions that follow.

The membrane-bound nucleus is the most prominent feature of the eukaryotic cell. Schleiden and Schwann, when setting forth the cell doctrine in the 1830s, considered that it had a central role in growth and development. Their belief has been fully supported even though they had only vague notions as to what that role might be, and how the role was to be expressed in some cellular action. The membrane less nuclear area of the prokaryotic cell, with its tangle of fine threads, is now known to play a similar role.

Some cells, like the sieve tubes of vascular plants and the red blood cells of mammals, do not possess nuclei during the greater part of their existence, although they had nuclei when in a less differentiated state. Such cells can no longer divide and their life span is limited. Other cells are regularly multinucleate. Some, like the cells of striated muscles or the latex vessels of higher plants, become so through cell fusion. Some, like the unicellular protozoan Paramecium, are normally binucleate, one of the nuclei serving as a source of hereditary information for the next generation, the other governing the day-to-day metabolic activities of the cell. Still other organisms, such as some fungi, are multinucleate because cross walls, dividing the mycelium into specific cells, are absent or irregularly present. The uninucleate situation, however, is typical for the vast majority of cells, and it would appear that this is the most efficient and most economical manner of partitioning living substance into manageable units. This point of view is given credence not only by the prevalence of uninucleate cells, but because for each kind of cell there is a ratio maintained between the volume of the nucleus and that of the cytoplasm. If we think of the nucleus as the control centre of the cell, this would suggest that for a given kind of cell performing a given kind of work, one nucleus can "take care of" a specific volume of cytoplasm and keep it in functioning order. In terms of materials and energy, this must mean providing the kind of information needed to keep flow of materials and energy moving at the correct rate and in the proper channels. With the multitude of enzymes in the cell, materials and energy can of course be channeled in a multitude of ways; it is the function of some informational molecules to make channels of use more preferred than others at any given time. How this regulatory control is exercised is not entirely clear. The nucleus is generally a rounded body. In plant cells, however, where the centre of the cell is often occupied by a large vacuole, the nucleus may be pushed against the cell wall, causing it to assume a lens shape. In some white blood cells, such as polymorphonucleated leukocytes, and in cells of the spinning gland of some insects and spiders, the nucleus is very much lobed. The reason for this is not clear, but it may relate to the fact that for a given volume of nucleus, a lobate form provides a much greater surface area nuclear-cytoplasmic exchanges, possibly affecting both the rate and the amount of metabolic reactions. The nucleus, whatever its shape, is segregated from the cytoplasm by a double membrane, the nuclear envelope, with the two membranes separated from each other by a perinuclear space of varying width. The envelope is absent only during the time of cell division, and then just for a brief period. The outer membrane is often continuous with the membranes of the endoplasmic reticulum, a possible retention of an earlier relationship, since the envelope, at least in part, is formed at the end of cell division by coalescing fragments of the endoplasmic reticulum. The cytoplasm side of the nucleus is frequently coated with ribosome, another fact that stresses the similarity and relation of the nuclear envelope to the endoplasmic reticulum. The inner membrane seems to possess a crystalline layer where it abuts the nucleoplasm, but its function remains to be determined.

Everything that passes between the cytoplasm and the nucleus in the eukaryotic cell must transverse the nuclear envelope. This includes

some fairly large molecules as well as bodies such as ribosome, which measure about 25nm in diameter. Some passageway is, therefore, obviously necessary since there is no indication of dissolution of the nuclear envelope in order to make such movement possible. The nuclear pores appear to be reasonable candidates for such passageways. In plant cells these are irregularly and rather sparsely distributed over the surface of the nucleus, but in the amphibian oocyte, for example, the pores are numerous, regularly arranged, and octagonal and are formed by the fusion of the outer and inner membrane.

1. According to the first paragraph, the contention of Schleiden and Schwann that the nucleus is the most important part of the cell has:

- A. been proved to be true.
- B. has been true so far but false in the case of the prokaryotic cell
- C. is only partially true.
- D. has been proved to be completely false.

2. Which of the following kinds of cells do not have nuclei?

- A. Sieve Tubes
- B. Red bloods cells of mammals.
- C. Prokaryotic cells
- D. None of the above.

3. What is definitely a function of the nuclei of the normally binucleate cell?

- A. To arrange for the growth and nourishment if the cell.
- B. To hold hereditary information for the next generation.
- C. To make up the basic physical structure of the organism.
- D. To fight the various foreign diseases attacking the body.

4. It may be inferred from the passage that the vast majority of cells are:

- A. Multinucleate
- B. Binucleate
- C. Uninucleate
- D. Anucleate.

5. Why, according to the passage, are fungi multinucleate?

- A. Because they need more food to survive.
- B. Because they frequently lack walls dividing the mycelium.
- C. Because the mycelium is area-wise much bigger that other cells.
- D. Cannot be determined from the passage.

6. Why, according to the passage, is the polymorphonucleated leukocyte probably lobed?

- A. Because it is quite convoluted in its functions.
- B. Because it is a red blood cell which is the most important cell in the body.
- C. Because it provides a greater area for metabolic reaction.
- D. Because it previous greater strength to the spider web due to greater area.

7. The function of the crystalline layer of the inner membrane of the nucleus is:

- A. generation of nourishment of the cell.
- B. holding together the disparate structure of the endoplasmic reticulum.
- C. helping in transversal of the nuclear envelope.
- D. cannot be determined from the passage.

Directions for Q.8 to Q.12.

Each of the questions below consists of two words that have a certain relationship to each other, followed by four lettered pairs of related words. Select the lettered pair of words that has the similar relationship.

8. PARQUET : WOOD

- A. color : painting
- B. mosaic : glass

C. potpourri : medley

D. collage : tapestry

9. SAW : CARPENTER

- A. Scissors : tailor
- C. Brush : painter

- B. Wagon : farmer
- D. Typewriter : author

10. LURK : WAIT

- A. boost : elevate
- C. abscond : depart

- B. deplete : drain
- D. bilk : cheat

11. ALCHEMY : SCIENCE

- A. nostrum : remedy
- C. ploy : tactic

- B. sideshow : carnival
- D. forgery : imitation

12. NEEDLE : KNIT

- A. bait : fish
- C. loom : weave

- B. match : fire
- D. soap : wash

Directions for Q.13 to Q.17.

Each sentence below has one or two blanks. Each blank shows that something has been omitted. Under each sentence four words are given as choice. Choose the one word for each blank that best fits the meaning of the sentences as a whole.

13. The Sociologist responded to the charge that her new theory was ----- by pointing out that it did not in fact contradict accepted sociological principles.

- A. unproven
- C. superficial
- B. banal
- D. heretical

14. Despite assorted effusion to the contrary, there is no necessary link between scientific skill and humanism, and quite possibly, there may be something of a ---- between them.

- A. dichotomy
- C. reciprocity
- B. congruity
- D. generosity

15. The most technologically advanced societies have been responsible for the catatest ---- indeed savagery seems to be indirect proposition to ----

- A. inventions - know-how
- C. triumphs - civilizations
- B. wars - viciousness
- D. atrocities - development

Section 2

Mathematical Skills

1. If a number is multiplied by 22 and the same number is added to it, then we get a number that is half the square of that number. Find the number

- A. 45
- C. 47
- B. 46
- D. Data insufficient

2. A shop sold 64 kettles of two different capacities. The smaller kettle cost a rupee less than the larger one. The shop made 100 rupees from the sale of large kettles and 36 rupees from the sale of small ones. How many kettles of either capacity did the shop sell and what was the price of each kettle?

- A. 20 kettles for 2.5 rupees each and 14 kettles for 1.5 rupees each
- B. 40 kettles for 4.5 rupees each and 24 kettles for 2.5 rupees each
- C. 40 kettles for 2.5 rupees each and 24 kettles for 1.5 rupees each
- D. Either A or B

3. A mixture of 70 liters of alcohol and water contains 10% of water. How much water must be added to the above mixture to make the water 12.5% of the resulting mixture?

- A. 1 liter
- C. 2 liters
- B. 1.5 liter
- D. 2.5 liters

4. After three successive equal percentages raise in the salary the sum of 100 rupees turned into 140 rupees and 49 paise. Find the percentage rise in the salary.

- A. 12% B. 22%
C. 66% D. 82%

5. An orange vendor makes a profit of 20% by selling oranges at a certain price. If he charges Rs.1.2 higher per orange he would gain 40%. Find the original price at which he sold an orange.

- A. Rs.5 B. Rs.4.8
C. Rs.6 D. None of these

6. A person lent out some money for 1 year at 6% per annum simple interest and after 18 months, he again lent out the same money at a simple interest of 24% per annum. In both the cases, he got Rs.4704. Which of these could be the amount that was lent out in each case if interest is paid half yearly?

- A. Rs.4000 B. Rs.4400
C. Rs.4200 D. Rs.3600

7. A tank of capacity 25 liters has an inlet and an outlet tap. If both are opened simultaneously, the tank is filled in 5 minutes. But if the outlet flow rate is doubled and taps opened the tank never gets filled up. Which of the following can be outlet flow rate in liters/min?

- A. 2 B. 6
C. 4 D. 3

8. In how many ways one white and one black rook can be placed on a chessboard so that they are never in an attacking position?

- A. 64 50 B. 64 49
C. 63 49 D. None of these

9. A speaks the truth 3 out of 4 times, and B 5 out of 6 times. What is the probability that they will contradict each other in stating the same fact?

- A. $\frac{2}{3}$ B. $\frac{1}{3}$
C. $\frac{5}{6}$ D. $\frac{1}{2}$

10. 5 years ago, Aditya's age was twice Anvesh's age. 5 years hence, Aditya's age will be $\frac{4}{3}$ times the age of Anvesh. Find Aditya's present age.

- A. 5 years B. 10 years
C. 15 years D. 20 years

11. X, Y and Z started a business by investing RS.72000, Rs.27000 and Rs.81000. It was decided that servant's salary Rs.2000 per month should be given from the profit. If the profit is Rs.25000 in the first month and Rs.20000 in the second month and average profit of remaining 10 months is Rs.21000, find the share of Z.

- A. Rs.34650 B. Rs.92400
C. Rs.10000 D. Rs.103950

12. A Fibonacci sequence is formed by adding the previous two numbers, e.g., 1, 2, 3, 5, 8 etc. or 2, 5, 7, 12, 19, 31... The eighth term of the sequence 1,2, 3, 5, ... is:

- A. 7 B. 19
C. 20 D. 34

13. X and Y completed a work together in 5 days. Had X worked at twice the speed and Y at half the speed, it would have taken them four days to complete the job. How much time would it take for X alone to do the work?

- A. 10 days B. 20 days
C. 25 days D. 15 days

14. A yearly payment to a servant is Rs.90 plus one turban. The

servant leaves the job after 9 months and receives Rs.65 and a turban, then find the price of the turban:

- A. Rs.10 B. Rs.15
C. Rs.7.50 D. Cannot be determined

15. The HCF and LCM of two numbers is given. It is possible to find out the two numbers uniquely if

I: Either the sum or the difference between the two numbers is known.

II: HCF of the two numbers = LCM of the two numbers.

III: LCM / HCF = Prime number.

- A. I and II only B. II only
C. II and III only D. I, II and III

Section 3 Data Analysis & Sufficiency

Directions for Q.1 to Q.5: Refer to the information given below to answer the following questions.

The modern Alladin has a charm, which has 6 switches 'a', 'b', 'c', 'd', 'e' and 'f' in that order arranged in a row. They can be switched on in various combinations to call different animals to his service. We also know that:

When all the switches are off, no animal appears.

When only one switch or two alternate switches are on, a cat appears

When only two adjacent switches are on, a dog appears.

When three consecutive switches are on, a tiger appears.

For all other combinations, a squirrel appears.

At a time, only one animal appears.

1. If 'c' is kept on as a constraint, how many ways are there of calling a tiger?

- A. 1 B. 2
C. 3 D. 4

2. In how many ways can a cat be called?

- A. 8 B. 10
C. 11 D. 12

3. Alladin is in a difficult situation where only a tiger or a dog can help him. In how many ways can he save himself?

- A. 8 B. 9
C. 10 D. 11

4. In how many ways can a dog be called if 'f' is kept on?

- A. 6 B. 1
C. 2 D. 5

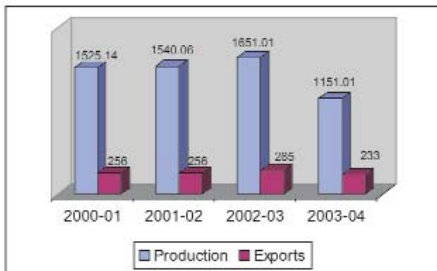
5. If 'a' is always on, in how many ways can a cat be called?

- A. 3 B. 1
C. 0 D. 2

Directions for Q.6 to Q.10: Refer to the following bar diagram and answer the following questions.

6. What is the ratio of export in 2002-03 and 2000-01?

- A. 100: 87.63 B. 100: 89.82
C. 100: 85.33 D. 100: 91.16



7. During which year was the difference in production and export the highest?

- A. 2000-01 B. 2001-02
C. 2002-03 D. 2003-04

8. By what percent did production go up in 2002-03?

- A. 6.85% B. 7.20%
C. 7.44% D. 7.83%

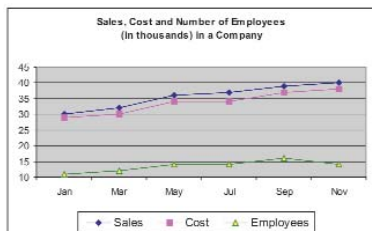
9. What was the increase in production during 2002-03 as compared to that during 2000-01?

- A. 91.23 units B. 125.87 units
C. 133.77 units D. 135.87 units

10. By what percent did the domestic demand increase in 2002-03 (assume whatever is produced is sold)

- A. 5.8% B. 6.38%
C. 7.79% D. 10.67%

Directions for Q.11 to Q.15: Answer the questions based on the graph given below:



11. Which month records the least profit?

- A. September B. January
C. July D. None of these

12. In which months is the total increase in the cost least as compared to two months ago?

- A. March B. September
C. July D. May

13. In which month is the percentage increase in sales over the sales two months before, the second highest?

- A. March B. September
C. July D. None of these

14. Which month has the lowest profit per employee?

- A. September B. July
C. January D. March

15. Assuming that no employees left the job, what was the percentage increase in the number of employees in the given period?

- A. 46% B. 50%
C. 27.27% D. Cannot be determined

Section 4 Intelligence & Critical Reasoning

Directions for Q.1 to Q.3:

Refer to the information below and answer the questions that follow.

The table below provides certain demographic details of 30 respondents who were part of a survey. The demographic characteristics are: gender, number of children, and age of respondents. The first number in each cell is the number of respondents in that group. The minimum and maximum age of respondents in each group is given in brackets. For example, there are five female respondents with no children and among these five, the youngest is 34 years old, while the oldest is 49.

1. The percentage of respondents aged less than 40 years is at least

- A. 10% B. 16.67%
C. 20.0% D. 30%

2. Given the information above, the percentage of respondents older than 35 can be at most.

- A. 30% B. 73.33%
C. 76.67% D. 90%

3. The percentage of respondents that fall into the 35 to 40 years age group (both inclusive) is at least

- A. 6.67% B. 10%
C. 13.33% D. 26.67%

Directions for Q.4 to Q.7: In each question there are two statements: 1 and 2.

Choose [A] if the question can be answered by one of the statements alone but not by the other.

Choose [B] if the question can be answered by using either statement alone.

Choose [C] if the question can be answered by using both the statements together but cannot be answered using either statement alone.

Choose [D] if the question cannot be answered even by using both the statements A and B.

No. of children	Male	Female	Total
0	1 (38, 38)	5 (34, 49)	6
1	1 (32, 32)	8 (35, 57)	9
2	8 (21, 65)	3 (37, 63)	11
3	2 (32, 33)	2 (27, 40)	4
Total	12	18	30

4. F and M are father and mother of S, respectively. S has four uncles and three aunts. F has two siblings. The siblings of F and M are unmarried. How many brothers does M have?

1. F has two brothers.
2. M has five siblings.

5. A game consists of tossing a coin successively. There is an entry fee of Rs. 10 and an additional fee of Re. 1 for each toss of the coin. The game is considered to have ended normally when the coin turns heads on two consecutive throws. In this case the player is paid Rs. 100. Alternatively, the player can choose to terminate the game prematurely after any of the tosses. Ram has incurred a loss of Rs 50 by playing this game. How many times did he toss the coin?

1. The game ended normally.

2. The total number of tails obtained in the game was 138.

6. Each packet of SOAP costs Rs 10. Inside each packet is a gift coupon labelled with one of the letters S, O, A, and P. If a customer submits four such coupons that make up the word SOAP, the customer gets a free SOAP packet. Ms. X kept buying packet after packet of SOAP till she could get one set of coupons that formed the word SOAP. How many coupons with label P did she get in the above process?

1. The last label obtained by her was S and the total amount spent was Rs 210.
2. The total number of vowels obtained was 18.

7. If A and B run a race, then A wins by 60 seconds. If B and C run the same race, then B wins by 30 seconds. Assuming that C maintains a uniform speed what is the time taken by C to finish the race?

1. A and C run the same race and A wins by 375 meters.
2. The length of the race is 1 km

Directions for Q.8 to Q.10:

Answer the questions on the basis of the information given below.

Twenty one participants from four continents (Africa, Americas, Australasia, and Europe) attended a United Nations conference. Each participant was an expert in one of four fields, labour, health, population studies and refugee relocation. The following five facts about the participants are given.

- a The number of labour experts in the camp was exactly half the number of experts in each of the three other categories
- b Africa did not send any labour expert. Otherwise, every continent, including Africa, sent at least one expert for each category.
- c None of the continents sent more than three experts in any category.
- d If there had been one less Australasian expert, then the Americas would have had twice as many experts as each of the other continents.
- e Mike and Alfonso are leading experts of population studies who attended the conference. They are from Australasia.

8. Alex, an American expert in refugee relocation, was the first keynote speaker in the conference. What can be inferred about the number of American experts in refugee relocation in the conference, excluding Alex?

1. At least one.

2. At most two:

- | | |
|---------------------|---------------------|
| A. Only 1 and not 2 | B. Only 2 and not 1 |
| C. Both 1 and 2 | D. Neither 1 nor 2 |

9. Which of the following numbers cannot be determined from the information given?

- A. Number of labour experts from the Americas
- B. Number of health experts from Europe.
- C. Number of health experts from Australasia
- D. Number of experts in refugee relocation from Africa

10. Which of the following combinations is NOT possible?

- A. 2 experts in population studies from the Americas and 2 health experts from Africa attended the conference.
- B. 2 experts in population studies from the Americas and 1 health expert from Africa attended the conference.
- C. 3 experts in refugee relocation from the Americas and 1 health expert from Africa attended the conference.

D. Africa and America each had 1 expert in population studies attending the conference.

Directions for Q.11 to Q.15:

In each of the following questions the main statement is followed by four sentences each. Select the pair of sentences that relate logically with the given statement.

11. Either Sita is sick or she is careless.

- a. Sita is not sick
 - b. Sita is not careless.
 - c. Sita is sick
 - d. Sita is careless.
- | | |
|-------|-------|
| A. ab | B. ad |
| C. ba | D. da |

12. Ram gets a swollen nose whenever he eats hamburgers.

- a. Ram gets a swollen nose.
 - b. Ram does not eat hamburgers
 - c. Ram does not get a swollen nose
 - d. Ram eats hamburgers.
- | | |
|-------|-------|
| A. ab | B. dc |
| C. ac | D. bc |

13. Either the employees have no confidence in the management or they are hostile by nature.

- a. They are hostile by nature
 - b. They are not hostile by nature.
 - c. They have confidence in the management
 - d. They have no confidence in the management.
- | | |
|-------|-------|
| A. ba | B. dc |
| C. ac | D. bc |

14. Whenever Ram reads late into the night, his father beats him up.

- a. His father does not beat Ram.
 - b. Ram reads late into the night.
 - c. Ram reads early in the morning.
 - d. Ram's father beats him in the morning.
- | | |
|-------|----------------------|
| A. cd | B. bd |
| C. ab | D. None of the above |

15. All irresponsible parents shout if their children do not cavort.

- a. All irresponsible parents do not shout.
 - b. Children cavort
 - c. Children do not cavort.
 - d. All irresponsible parents shout.
- | | |
|-------|----------------------|
| A. ab | B. ba |
| C. ca | D. All of the above. |

Section 5 Indian & Global Environment

1. Which one of the following places was associated with Acharya

Vinoba Bhave's Bhoodan movement at the beginning of the movement?

- A. Udaygiri
- B. Raipur
- C. Pochampalli
- D. Venkatagiri

2. Parimarjan Negi has excelled in which one of the following games?

- A. Billiards
- B. Swimming
- C. Chess
- D. Weightlifting

3. Which one of the following rivers does not originate in India?

- A. Beas
- B. Chenab
- C. Ravi
- D. Sutlej

4. Cape Canaveral, the site from which space shuttle are launched is located on the coast of

- A. Florida
- B. Virginia
- B. North Carolina
- D. South Carolina

5. Where is the headquarters of Animal Welfare Board of India located?

- A. Ahmedabad
- B. Chennai
- C. Hyderabad
- D. Kolkata

6. Where is the famous Vijaya Vittala temple having its 56 carved pillars emitting

musical notes located?

- A. Belur
- B. Bhadrachalam
- C. Hampi
- D. Srirangam

7. Which one of the following revolts was made famous by Bankim Chandra Chatterjee in his novel Anand Math?

- A. Bhil uprising
- B. Rangpur and Dinapur uprising
- C. Bishnpur and Birbhum rebellion
- D. Sanyasi rebellion

8. Which one of the following companies is associated with the exploration and commercial production of oil in Barmer-Sanchore basin of Rajasthan?

- A. Cairn Energy
- B. Unocal Corporation
- C. Reliance Energy Ventures
- D. ONGC

9. Which one of the following types of waves are used in a night vision apparatus?

- A. Radio waves
- B. Microwaves
- C. Infra-red waves
- D. None of the above

10. Who was the Chief Justice of India when Public Interest Litigation (PIL) was introduced to the Indian Judicial System?

- A. M. Hidayatullah
- B. A.M. Ahmadi
- C. A.S.Anand
- D. P.N.Bhagawati

11. In which of the following animals is respiration done by skin?

- A. Flying Fish
- B. Sea Horse
- C. Frog
- D. Chameleon

12. The Pole star does not seem to move because

- A. it rotates rapidly
- B. it moves round the sun and not the earth
- C. it is in line with the earth's axis of rotation
- D. it does not move

13. Who of the following scientists proved that the stars with mass less than 1.44 times the mass of the sun end up as white Dwarfs when they die?

- A. Edwin Hubble
- B. S.Chandrashekar
- C. Stephen Hawking
- D. Steven Weinberg

14. Which of the following brings out publication called "Energy Statistics" from time to time?

- A. Central Power Research Institute
- B. Planning Commission
- C. Power Finance Corporation Ltd
- D. Central Statistical organisation.

15. Which one of the following planets takes the longest period of time for one revolution round the sun?

- A. Earth
- B. Saturn
- C. Jupiter
- D. Mars