UNION PUBLIC SERVICE COMMISSION

CIVIL SERVICES PRELIMINARY EXAMINATION

GENERAL STUDIES : PAPER - II (CSAT)

MODEL QUESTION PAPER/ PRACTICE TEST 4

Directions (Qs. 1 to 12): **These passages are followed by some questions, based on its contents. After reading the passage, choose the best answer to each question. Base your answer on information that is either stated or implied in the passage.**

PASSAGE

After evidence was obtained in the 1920s that the universe is expanding, it became reasonable to ask: will the universe continue to expand indefinitely, or is there enough mass in it for the mutual attraction of its constituents to bring this expansion to a halt? It can be calculated that the critical density of matter needed to break the expansion and "close" the universe, it equivalent to three hydrogen atoms per cubic metre. But the density of the observable universe-luminous matter in the form of galaxies-comes to only a fraction of this. If the expansion of the universe is to stop, there must be enough invisible matter in the universe to exceed the luminous matter in density by a factor of roughly 70.

Our contribution to the search for this "missing matter" has been to study the rotational velocity of galaxies at various distances from their centre of rotation. It has been known for some time that outside the bright nucleus of a typical spiral galaxy luminosity falls off rapidly with distance from the centre. If luminosity is a true indicator of mass, most of the mass would be concentrated toward the centre. Outside the nucleus the rotational velocity would decrease geometrically with the distance from the centre, in conformity with Kepler's law. Instead we have found that the rotational velocity in spiral galaxies either remains constant with increasing distance from the centre or increases slightly. This unexpected result indicates that the fall off in luminous mass with distance from the centre is balanced by an increase in nonluminous mass.

Our findings suggest that as much as 90 percent of the mass of the universe is not radiating at any wavelength with enough intensity to be detected on the Earth. Such dark matter could be in the form of extremely dim stars of low mass of large planets like Jupiter, or of black holes, either small or massive. While it has not yet been determined whether this mass is sufficient to "close" the universe, some physicists consider it significant that estimates are converging on the critical value.

1. The authors' suggestion that "as much as 90 percent of the mass of the universe is not radiating at any wavelength with enough intensity to be detected on the Earth" (last para) would be most weakened if which of the following were discovered to be true?

A) The density of the observable universe is greater than most previous estimates have suggested.

B) The bright nucleus of a typical spiral galaxy also contains some nonluminous matter.

C) Some galaxies do not rotate or rotate too slowly for their rotational velocity to be measured.

D) Spiral galaxies are less common than types of galaxies that contain little nonluminous matter.

2. The passage is primarily concerned with

A) Summarising research findings.

B) Criticising an accepted view

C) Defending a controversial approach

D) Contrasting competing theories.

3. The authors' study indicates that, in comparison with the outermost regions of a typical spiral galaxy, the region just outside the nucleus can be characterised as having.

A) Similar rotational velocity and similar luminosity

B) Lower rotational velocity and lower luminosity

C) Lower rotational velocity and higher luminosity.

D) Similar rotational velocity and higher luminosity.

4. It can be inferred from information presented in the passage that if the density of the universe were equivalent to significantly less than three hydrogen atoms per cubic metre, which of the following would be true as a consequence?

A) The density of the invisible matter in the universe would have to before than 70 times the density of the luminous matter.

B) Different regions in spiral galaxies would rotate at the same velocity.

C) The universe would continue to expand indefinitely.

D) Luminously would be a true indicator of mass.

5. The authors propose all of the following as possibly contributing to the "missing mater" in spiral galaxies Except

A) Small, dim stars B) Massive stars

C) Massive black holes D) Large planets.

6. The passage suggests that the results of the authors' study have changed their idea about which of the following characteristics of spiral galaxies?

I. The relative luminosity of different regions.

II. The different rotational velocity of different regions.

III. The relative distribution of matter in different regions.

A) I only B) II only C) I and II only D) II and III only

PASSAGE

At its recent annual meeting, World Bank officials spoke extensively about corruption. It is an understandable concern: money that the Bank lends to developing countries that ends up in secret bank accounts or finance contractors' luxurious lifestyle leaves a country more indebted, not more prosperous.

James Wolfensohn, the Bank's previous president and the author were widely credited with putting corruption on the Bank's agenda, against opponents who regarded corruption as a political issue, not an economic one, and thus outside the Bank's mandate. Our research showed systematic relationships between corruption and economic growth, which allowed us to pursue this critical issue.

But the World Bank would do well to keep four things in mind as it takes up the fight. First, corruption takes many forms, so a war on corruption has to be fought on many fronts. You can't fight the diversion of small amounts of money by weak and poor countries while ignoring the massive diversion of public resources into private hands of the sort that marked, say, Russia under Boris Yelstin.

In some countries, overt corruption occurs primarily through campaign contributions that oblige politicians to repay major donors with favours. Smaller scale corruption is bad, but systematic corruption of political process can have even greater costs. Campaign contributions and lobbying that lead to rapid privatisation of utilities-before appropriate regulatory frameworks are in place, and in a manner that produces only a few bidders-can impede development, even without direct kickbacks to government officials.

Life is never black and white. Just as there is no "one size fits all" policy for economic development, there is no such policy for fighting corruption. The response to corruption needs to be as complex and variegated as corruption itself.

Second, it's fine for the World Bank to deliver anti-corruption summons. But policies, procedures, and institutions are what matter. In fact, the Bank's procurement procedures are generally viewed around the world as a model to be admired. Indeed, some countries with large dollar reserves–hardly in need of World Bank credit–borrowed from the bank at far higher interest rates than they were getting from the US, believing that these procedures would help ensure high quality projects free of corruption and become standard in other areas.

But fighting corruption entails more than just good procurement procedures (avoiding, for instance, single source non competitive bidding). Many other policies and procedures can be enacted that reduce the incentive for corruption. For example, some tax systems are more corruption-resistant than others, because they curtail the discretionary authority of tax officials.

Third, the World Bank's primary responsibility to fight poverty, which means that when it plans to assist a poor country plagued with corruption, its challenge is to figure out how to ensure that its own money is not tainted and gets to projects and people that need it. In some cases, this may entail delivering assistance through non-governmental organisations. But seldom will it be the case that the best response is simply to be away.

Finally, while developing countries must take responsibility for rooting out corruption, there is much that the West can do to help. At a minimum, western governments and corporations should not be complicit. Every bribe that is taken has a payer, and too often the bribe payer is a corporation from an advanced industrial country or someone acting on its behalf.

Indeed, one reason for the so called "natural resource curse" – the fact that resource rich countries do not, on average, do as well as resource poor countries–is the prevalence of corruption, too often aided and abetted by companies that would like to get the resources they sell at discount prices. The US under President Jimmy Carter made an important contribution in passing the Foreign Corrupt Practices Act, which made bribery by American companies anywhere in the world illegal. The OECD's convention on bribery was another step in the right direction. Making all payments to governments transparent would bring further progress, and western governments could encourage this simply by tying this requirement to tax deductibility.

It is equally important to address bank secrecy, which facilitates corruption by providing corrupt dictators' wives a safe haven for their funds. In August 2001, just before the terrorist attacks on America, the US government vetoed on OECD effort to limit secret bank accounts. While the government has since reversed its stance on bank secrecy for terrorists, it has not done so far corrupt officials. A strong stand by the World Bank would enhance its credibility in the war on corruption.

Those who criticise the Bank's stance on corruption do not do so because they favour corruption. Some critics worry about corruption in the corruption agenda itself; that the fight will be used as a "cover" for cutting aid to countries that displease the US administration. Such concerns have found resonance in the seeming incongruity of the Bank's tough talk on corruption and simultaneous plans to expand lending to Iraq. No one is like to certify that Iraq is corruption free-or even ranks low on corruption internationally.

The main strident criticism, however, comes from those who worry that the Bank is straying away from its mandate. Of course, the Bank must do everything that it can to ensure that its money is well spent, which means fighting both corruption and incompetence.

But money itself will not solve all problems and a single-minded focus on fighting corruption will not bring development. On the contrary, it might merely divert attention from other issues of no less important for those struggling to lift themselves out of poverty.

(The author was Joseph D. Stiglitz, the Nobel laureate and Professor of Economics in Columbia University, USA. The above passage was adapted from his article published in an Indian daily in October 2006.)

7. Which one of the following **titles** could be **most** suitable for the passage?

A) The World Bank's aid to developing countries.

B) The World Bank's fight against corruption.

C) The US and the World Bank's roles in fight against corruption.

D) corrupting fight against corruption.

8. The tone of the author, in this passage, could be **best** described as **except**.

A) Critical

B) Analytical

C) Praiseworthy role of US to fight corruption.

D) Reviewing the World Bank's role to fight corruption in developing countries.

9. Which of the following(s), the author suggested that the World Bank would do well to keep things in mind as it takes up the fight against corruption?

I. Corruption in poor developing countries is so well spread that it is less of an administrative and economic issue than more of a political issue, which can be dealt with through countries' policy to fight corruption.

II. Despite the fact that it is the developing countries must take responsibility for rooting out corruption, the West can do much to help. Every bribe that is taken has a payer, and too often the bribe payer is a corporation from an advanced industrial country or some one acting on its behalf. Therefore, at a minimum, the western governments and corporations should not be complicit.

A) I only B) II only

C) I and II both D) None of the two

10. According to the passage, which of the following statement(s) is/are true?

I. US Government's stance on bank secrecy account, which facilitates corruption by providing corrupt officials with a safe haven for their funds, will limit bank secrecy and thus help fight corruption.

II. Contributions to election fund in some countries before election that oblige politicians to repay major donors with favours is a source of overt corruption.

III. When the World Bank confronts a poor country plagued with corruption, its challenge is to ensure that its own money is not tainted and gets to projects and people that need it. Only this way the Bank's primary responsibility to fight poverty could be fulfiled.

A) I only B) II only C) III only D) II and III only

11. What the author meant by the so called "natural resource curse" in his argument to fight against corruption?

I. Countries poor in natural resources (e.g fossil fuel, minerals, etc.) are necessarily poor and it becomes "natural curse" for these countries. Such countries become victims of corruption.

II. Oil-rich countries in the Middle East support corruption in allocating oil exploration contracts and as such natural resource becomes a curse for these countries.

III. The fact that resource rich countries do not, on average, do as well as resource poor countries, is the prevalence of corruption, too often aided and abetted by countries that would like to get the resources they sell at discount prices.

A) I only B) II only C) III only D) I, II and III

12. It can be inferred from the passage that the author's main thrust of argument is

A) A single minded focus on fighting corruption will not bring development. It might merely divert attention from all other issues of no less important for those struggling to lift themselves out of poverty.

B) That the response to corruption needs to be as complex and variegated as corruption itself. Just as there is no "one size fits all" policy for economic development, there is no such fighting policy for corruption. Life is never black and white.

C) That the corruption is a political issue, not an economic one, and thus outside the Bank's mandate

D) That the World Bank is straying its mandate to ensure that its money is well spent, which means fighting both corruption and incompetence.

Numbers: All numbers used are real numbers.

Figures: Position of points, angles, regions, etc., can be assumed to be in the order shown; and angle measures can be assumed to be positive.

Lines shown as straight can be assumed to be straight.

Figure can be assumed to lie in a plane unless otherwise indicated.

Figures that accompany questions are intended to provide information useful in answering the questions. However, unless a note states that a figure is drawn to scale, you should solve these problems NOT by estimating sizes by sight or by measurement, but by using your knowledge of mathematics.

Directions (Qs. 13 to 22): **Each of these questions has four answer choices. For each of these questions select the best of the answer choices given.**

13. If the quotient a/b is positive, which of the following must be true?

A) $a > 0$ B) $b > 0$ C) $a - b > 0$ D) $ab > 0$

14. If $x + 5 > 2$ and $x - 3 < 7$, the value of x must be between which of the following pairs of numbers?

A) -3 and 4 B) 2 and 7 C) -3 and 10 D) 3 and 10

15. If 4 is a solution of the equation $x^2 + 3x + k = 10$, where k is a constant, what is the other solution?

A) -18 B) -7 C) -28 D) None of these

16. If x and y are prime numbers, which of the following cannot be the sum of x and y?

A) 13 B) 23 C) 9 D) 16

17. Set A = {2, 3, 4, 5}, Set B = {4, 5, 6, 7, 8}

Two integers will be randomly selected from the sets above one integer from set A and one integer from set B. What is the probability that the sum of the two integers will equal 9 ?

A) 0.20 B) 0.25 C) 0.30 D) 0.33

18. If a positive integer n is divisible by both 5 and 7, n must also be divisible by which of the following?

I 12 II 35 III 70

A) None B) II only C) I and II D) II and III

19. How many integers n are there such that $1 < 5n + 5 < 25$?

A) Four B) Two C) Three D) Five

20. In a charity show tickets numbered consecutively from 101 through 350 are placed in a box. What is the probability that a ticket selected at random (blindly) will have a number with a hundreds digit of 2?

A) 0.285 B) 0.400 C) $\frac{100}{249}$ D) $\frac{99}{250}$

21. If $\frac{p}{q} < 1$, and p and q are positive integers, which of the following must be greater than 1?

A) $\frac{P}{q^2}$ B) $\frac{q}{p^2}$ C) $\frac{q}{p}$ D) $\sqrt{\frac{p}{q}}$

22. In the xy-coordinate system, if (a, b) and (a + 3), (b + k) are two points on the line defined by the equation x = 3y - 7, then k =

A) 3 B) $\frac{1}{3}$ C) 1 D) 9

Directions (Qs. 23 to 32): **In each of the problems, a question is followed by two statements marked (A) and (B) containing certain data pertaining to the problem. YOu need to determine whether the data provided by the statements are sufficient to answer the question from the four answer choices numbered (1), (2), (3) and (4). Choose the correct answer for each question based upon the statement data.**

Choose

(1) If the question can be answered by one of the statements (A) or (B) alone but not by the other statement.

(2) If the question can be answered by either statement alone

(3) If the question can be answered by using both the statements together, but cannot be answered by using either statement alone

(4) If the question cannot be answered even by using both statements together

23. Is $\frac{100 + n}{n}$ not an integer?

(A) n – 3 = 0 (B) $n - 2^2 = 0$

A) (A) or (B) alone, but not by other statement

B) Either statement

C) Both statements together

D) Cannot be answered

24. Is the number x between 0.2 and 0.7 ?

(A) 560x < 280 (B) 700x > 280

A) (A) or (B) alone, but not by other statement

B) Either statement

C) Both statements together

D) Cannot be answered

25. If x is equal to one of the numbers $\frac{1}{4}$, $\frac{3}{8}$ or $\frac{2}{5}$ what is the value of x?

(A) $\frac{1}{4} < x < \frac{1}{2}$ (B) $\frac{1}{3} < x < \frac{3}{5}$

A) (A) or (B) alone, but not by other statement

B) Either statement

C) Both statements together

D) Cannot be answered

26. Four students are added to a coaching class. Would the faculty of the class be able to divide her students evenly in a group (or groups) of 8?

(A) The number of students in the class is currently not divisible by 8

(B) If 12 students were added, the faculty could divide everyone in groups of 8 without any leftovers.

A) (A) or (B) alone, but not by other statement

B) Either statement

C) Both statements together

D) Cannot be answered

27. What is the value of the two digit integer X?

(A) The sum of the two digits is 3

(B) X is divisible by 3

A) (A) or (B) alone, but not by other statement

B) Either statement

C) Both statements together

D) Cannot be answered

28. A certain company currently has how many employees?

(A) If 3 additional employees are hired by the company and all of the present employees remain, there will be at least 20 employees in the company.

(B) If no additional employees are hired by the company and 3 of the present employees resign, there will be fewer than 15 employees in the company

A) (A) or (B) alone, but not by other statement

B) Either statement

C) Both statements together

D) Cannot be answered

29. Members in a club either speak English or Tamil or both. What is the number of members in the club who speak only Tamil?

(A) There are 300 members in the club and the number of members who speak both English and Tamil is 196

(B) The number of members who speak only English is 58

A) (A) or (B) alone, but not by other statement

B) Either statement

C) Both statements together

D) Cannot be answered

30. What is the value of integer n?

(A) $n(n + 1) = 6$ (B) $2^{2n} = 16$

A) (A) or (B) alone, but not by other statement

B) Either statement

C) Both statements together

D) Cannot be answered

31. In PQR, if PQ = x, QR = x + 2, and PR = y, which of the three angels of ΔPQR has the greatest degree measure?

(A) y = x + 3 (B) x = 2

A) (A) or (B) alone, but not by other statement

B) Either statement

C) Both statements together

D) Cannot be answered

32. Is x = y?

(A) $(x + y)\left(\frac{1}{x} + \frac{1}{y}\right) = 4$ (B) $(x - 50)^2 = (y - 50)^2$

A) (A) or (B) alone, but not by other statement

B) Either statement

C) Both statements together

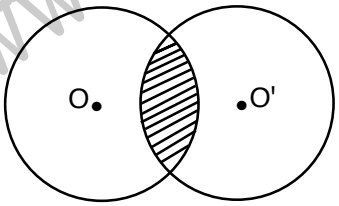
D) Cannot be answered

Directions (Qs. 33 to 47): **Each of these questions has four answer choices. For each of these questions select the best of the answer choices given.**

33. For what value of n, $\frac{a^{n+1} + b^{n+1}}{a^n + b^n}$ $a \neq b$ is the arithmetic mean of a and b?

A) 1 B) 2 C) 3 D) 0

34.



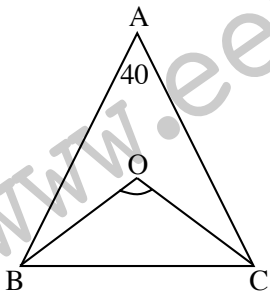
In the figure above there are two different circles having centres 0 and 0' and each having the equal radius of 1 cm. The area of the shaded portion would be .....

A) $\frac{\pi}{2}$ B) $\frac{\pi}{2} - 1$ C) $\frac{\pi}{4}$ D) None of these

35. The co-efficient of x in the equation $x^2 + px + q = 0$ was wrongly written as 17 in place of 13 and the roots thus found were −2 and −15. The roots of the correct equation would be .....

A) −4, −9 B) −3, −10 C) −3, −9 D) −4, −10

36.



In the above figure, ∠A = 40° and if the bisectors of ∠B and ∠C meets at O, then the ∠BOC would be .....

A) 40° B) 90° C) 70° D) 110°

37. A fraction is doubled when 2 is added to both its numerator and denominator and trebled when 8 is added to both its numerator and denominator.

(Numerator and denominator are both positive integers). The denominator (d) of the fraction then must be .....

A) $d \geq 4$ B) $d \leq 4$ C) $d = 4$ D) $2 < d < 5$

38. Three cubes with 8 cm edge are joined end to end. The ratio of the total surface area of resultant new cuboid to that of the sum of the surface areas of three cubes will be .....

A) 9 : 7 B) 7 : 3 C) 3 : 8 D) 7 : 9

39. The condition for one root of the equation $ax^2 + bx + c = 0$ to be twice of the other root must be ....

A) $c^2 = 4a + b^2$ B) $b^2 = 4ac$ C) $2b^2 = 9ac$ D) $c^2 = 9a - b^2$

40. A man can row 6 km/hr in still water. If it takes him twice as long to row up, as to row down the river, then the rate of current in the stream would be .....

A) 4 km/hr B) 2 km/hr C) 3 km/hr D) 8 km/hr

41. A number consists of three digits whose sum is 10. The middle digit is equal to sum of the other two and the number will be increased by 99 if the final digit and the third digit are interchanged. The digit in the hundreds place is .....

A) 3 B) 5 C) 4 D) 2

42. If $n > 0$, then $2^{12n} - 6^{4n}$ is always divisible by .....

A) 110 B) 120 C) 160 D) 100

43. In a glass of milk, the proportion of pure milk and water is 3 : 1, how much of the mixture must be withdrawn and substituted by water so that the resulting mixture may become half pure milk and half water?

A) $\frac{1}{4}$ unit B) $\frac{1}{3}$ unit C) $\frac{3}{4}$ D) $\frac{1}{2}$ unit

44. If the sum of the two sides of a right angled triangle is 17 units and the hypotenuse the triangle is 13 units, the length of the smaller side must be .....

A) 3 B) 5 C) 7 D) 9

45. The maximum value of the function $y = 4.5 - x^2 + 2x$ could be .....

A) 4.5 B) 2.5 C) 5.5 D) 1

46. A cultural committee of 6 is to be formed from 7 men and 4 women. In how many ways the committee can be formed with at least 2 women in the committee?

A) 210 B) 140 C) 300 D) 371

47. A car driver in fog, passes a pedestrian who was walking at the rate of 2km/hr in same direction. The pedestrian could see the car for 6 minutes and it was visible to him upto a distance of 0.6 km. The speed of the car would be .....

A) 8 km/hr B) 800 m/hr C) 200 m/hr D) 15 km/hr

Directions (Qs. 48 to 53): **These questions are based on a proposition or a sentence or a passage. Each proposition/sentence/ passage represents an argument, which consists of several parts such as an assumption, a conclusion, an inference or a premise, etc. These terms are defined as follows:**

Argument: An argument is any group of propositions of which one is claimed to follow from others, which are regarded as providing support or grounds for the truth of that one.

Assumption: An assumption is an unstated and/or implies premise(s) that support(s) the conclusion.

Conclusion: The conclusion of an argument is the proposition that is affirmed on the basis of other propositions of the argument. These other propositions which are affirmed (or assumed) as providing support or reasons for accepting the conclusion, are the premises of that argument. Conclusion and inference are often used synonymously in an argument. In an argument passage, there could be one or more minor conclusion(s) which serve(s) as the premise(s) for the major or main conclusion of the argument passage.

Premise: A premise is a started reason or a piece of evidence, facts, examples, that support(s) the conclusion or inference.

In this part, an argument passage, an excerpt or a passage, is followed by questions which are statements either concerned with or related to the passage or reproduced from the argument passage. These questions are concerned with the parts of an argument as defined above i.e. assumption, conclusion/inference, premise, etc.

Identify if the statement(s) given in the question is an assumption, a conclusion/inference, a premise, or none of these. Choose the following number as indicated below.

Choose

A) If the statement is an assumption

B) If the statement is a conclusion.

C) If the statement is a premise

D) If the statement is not an argument.

PASSAGE

Traditionally, the first firm to commercialise a new technology has benefited from the unique opportunity to shape product definitions, forcing followers to adapt to a standard or invest in an unproven alternative. Today, however, the largest payoffs may go to companies that lead in developing integrated approaches for successful mass production and distribution.

Producers of the Beta format for videocassette recorders (VCRs), for example, were first to develop the VCR commercially in 1975, but producers of the rival VHS (Video Home System) format proved to be more successful at forming strategic alliances with other producers and distributors to manufacture and market their VCR format, seeking to maintain exclusive control over VCR Distribution. But producers were reluctant to form such alliances and eventually lost ground to VHS in the competition for the global VCR market.

Despite Beta's substantial technological head start and the fact that VHS was neither technically better nor cheaper than Beta, developers of VHS quickly turned a slight early lead in sales into a dominant position. Strategic alignments with producers of prerecorded tapes reinforced the VHS advantage. The perception among consumers that prerecorded tapes were more available in VHS format further expanded VHS's share of the market. By the end of the 1980s. Beta was no longer in production.

48. ..... the largest payoffs may go to companies that lead in developing integrated approaches for successful mass production and distribution.

A) An assumption B) A conclusion

C) A promise D) Not an argument

49. Seeking to maintain exclusive control over VCR distribution, Beta producers were reluctant to form such alliances and eventually lost ground to VHS in the competition for the global VCR market .....

A) An assumption B) A conclusion

C) A promise D) Not an argument

50. Strategic alignments with producers of prerecorded tapes reinforced the VHS advantage.

A) An assumption B) A conclusion

C) A promise D) Not an argument

51. The perception among consumers that prerecorded tapes were more available in VHS format expanded VHS's share of the market.

A) An assumption B) A conclusion

C) A promise D) Not an argument

52. Producers of he Beta format for videocassette recorders (VCR), for example, were first to develop the VCR commercially in 1975, but producers of the rival VHS (Video Home System) format provided to be more successful at forming strategic alliances with other producers and distributors to manufacture and market their VCR format.

A) An assumption B) A conclusion

C) A promise D) Not an argument

53. Traditionally, the first firm to commercialise a new technology has benefited from the unique opportunity to shape produce definitions, forcing followers to adapt to a standard or invest in an unproven alternative.

A) An assumption B) A conclusion

C) A promise D) Not an argument

Directions (Qs. 54 to 69): **The questions in this group are based on the content of a passage. After reading the passage, choose the best answer to each question from the answer choices given numbered (A),(B), (C) and (D) for each question. Answer all questions, following the passage on the basis of what is stated or implied in the passage.**

PASSAGE

The function of capital markets is to facilitate an example of funds among all participants. and yet in practice we find that certain participants are not on par with others. Members of society have varying degrees of market strength in terms of information they bring to a transaction, as well as of purchasing power and credit worthiness, as defined by lenders.

For example, within minority communities, capital markets do not properly fulfil heir functions; they do not provide access to the aggregate flow of funds in the United States. The financial system does not generate the credit or investment vehicles needed for underwriting economic development in minority areas. The problem underlying this disfunction is found in a rationing mechanism affecting both the available alternatives for investment and the amount of financial resources. This creates a distributive mechanism penalising members of minority groups because of their socio-economic differences from others. The existing system expresses definite socially based investment preferences that result from the previous allocation of income and that influence the allocation of resources for the present and future. The system tends to increase the inequality of income distribution. And, in the United States economy, a greater inequality of income distribution leads to a greater concentration of capital in certain types of investments.

Most traditional financial market analysis studies ignore financial markets' deficiencies in allocation because of analysts' inherent preferences for the simple model of perfect competition. Conventional financial analysis pays limited attention to issues of market structure and dynamics,, relative costs of information, and problems of income distribution. Market participants act as entirely independent and homogeneous individuals with perfect foresight about capital market behaviour. Also it is assumed that each individual in the community at large has the same access to the market and the same opportunity to transact and to express the preference appropriate to his or her individual interest. Moreover, it is assumed that transaction costs for various types of financial instruments (stocks, bonds, etc) are equally known and equally divided among all community members.

54. The main point made by the passage is that .....

A) Investments in minority communities can be made by the use of various alternative financial instruments, such as stocks and bonds.

B) The allocation of financial resources takes place among separate individual participants, each of whom has access to the market.

C) Since transaction costs for stocks, bonds and other financial instruments are not equally apportioned among all minority group members, the financial market is subject to criticism.

D) The existence of certain factors adversely affecting members of minority groups shows that financial markets do not function as conventional theory says the way they function.

55. Which of the following can be inferred about minority communities on the basis of the passage?

A) They are not granted governmental subsidies to assist in underwriting the cost of economic development.

B) They do not receive the share of the amount of funds available for investment that would be expected according to traditional financial market analysis.

C) They provide a significant portion of the funds that become available for investment in the financial market.

D) They provide the same access to alternative sources of credit to finance businesses as do majority communities.

56. The passage states that traditional studies of the financial market overlook imbalance in the allocation of financial resources because

A) Those performing the studies choose an oversimplified description of the influences on competition.

B) The analysts who study the market are unwilling to accept criticism of their methods as biased.

C) Such imbalances do not appear in the statistics usually followed to measure the market's behaviour.

D) An optimum allocation of resources is the final result of competition among participants.

57. According to the passage, analysts have conventionally tended to view those who participate in financial markets as .....

A) Varying in market power with respect to one another.

B) Having equal opportunities to engage in transactions.

C) Influencing the allocation of funds through prior ownership of certain kinds of assets.

D) Basing Judgements about future events mainly on chance.

58. A difference in which of the following would be an example of inequality in transaction costs as alluded to in the last lines of the passage?

A) Fees charged to large and small investors for purchasing stocks

B) Exchange rates in dollars for currencies of different countries.

C) Maximum amount of loans extended by a bank to business in different areas.

D) Fees paid to different attorneys for preparing legal suits for damages.

59. According to the passage, a questionable assumption of the conventional theory about the operation of financial markets is that .....

A) Market structure and market dynamics depend on income distribution.

B) Those who engage in financial market transactions are perfectly well income about the market

C) Inequalities in income distribution are increased by the functioning of the financial market.

D) Credit worthiness as determined by leaders is a factor determining market access.

60. The author's main point is argued by .....

A) Showing that omissions in a theoretical description make it inapplicable in certain cases.

B) Giving examples that support a conventional generalisation.

C) Demonstrating that an alternative hypothesis more closely fits the data.

D) Criticising the presuppositions of the proposed plan.

PASSAGE

It was once believed that the brain was independent of metabolic processes occurring elsewhere in the body. In recent studies, however, we have discovered that the production and release in brain neurons of the neurotransmitter serotonin (neurotransmitters are compounds the neurons use to transmit signals to other cells) depend directly on the food that the body processes.

Our first studies sought to determine whether the increase in serotonin observed in rats given a large injunction of the amino acid tryptophan might also occur after rats at meals that change tryptophan levels in the blood. We found that, immediately after the rats began to eat,. parallel elevations occurred in blood tryptophan, brain tryptophan and brain serotonin levels. These findings suggested that the production and release of serotonin in brain neurons were normally coupled with blood tryptophan increases. In later studies we found that injecting insulin into a rates blood stream also caused parallel elevations in blood and brain tryptophan levels and in serotonin levels. We then decided to see whether the secretion of the animal's own insulin similarly affected serotonin production. We gave the rats a carbohydrate - containing meal that we knew would elicit insulin secretion. As we have hypothesized, the blood tryptophan level and the concentrations of tryptophan and of serotonin in the brain increased after the meal.

Surprisingly, however, when we added a large amount of protein to the meal, brain tryptophan and serotonin levels fell. Since protein contains tryptophan, who does it depress brain tryptophan levels? The answer lies in the mechanism that provides blood tryptophan to the brain cells. This same mechanism also provides the brain cells with other amino acids found in protein, such as tryrosine and leucine. The consumption of protein increases blood concentration of the other amino acts much more, proportionately, than it does that of tryptophan.

The more protein is in the meal, the lower is the ratio of the resulting blood tryptophan concentration to the concentration of competing amino acids, and the more slowly is tryptophan provided to the brain. thus the more protein in the meal, the less serotonin subsequently produced and released.

61. According to the passage, one reason that the authors gave rats carbohydrates was to .....

A) Compare the effects of carbohydrates with the effects of proteins

B) Depress the rates tryptophan levels

C) Cause the rats to produce insulin

D) Demonstrate that insulin is the most important substance secreted by the body.

62. The authors' discussion of the "mechanism that provides blood tryptophan to the brain cells" is meant to ..... (see middle of the last 3rd para)

A) provide supporting evidence for a controversial scientific theory

B) Refute the conclusions of a previously controversial scientific theory

C) Help explain why a particular research finding was obtained

D) Stimulate further research studies

63. Which of the following titles best summarises the content of the passage?

A) Amino Acids and Neurotransmitters: The connection between serotonin levels and tyrosine

B) Neutrotransmitters: Their crucial function in Cellular Communication

C) The effects of food intake on the Production and Release of Serotonin: Some Recent Findings

D) The Blood Supply and the Brain: a Reciprocal Dependence

64. According to the passage, the speed with which tryptophan is provided to the brain cells of a rat varies with the --

A) Concentration of tryptophan in the brain before a meal

B) Concentration of serotonin in the brain before a meal

C) Concentrating of leucine in the blood rather than on the concentration of tyrosine in the blood after a meal

D) Amount of protein present in the meal

65. According to the passage, an injection of insulin was most similar in its effect on rats to an injection of .....

A) Blood B) Tryptophan C) Tyrosine D) Leucine

66. According to the passage, when the authors began their first studies, they were aware that .....

A) Tryptophan levels in the blood were difficult to monitor with accuracy

B) There were many neurotransmitters whose production was dependent on metabolic processes elsewhere in the body

C) They would eventually need to design experiments that involve feeding rats high concentrations of protein

D) Serotonin levels increased after rats were injected with large amount of tryptophan

67. According to the passage, the more protein a rat consumes, the lower will be the .....

A) Ratio of the rates blood tryptophan concentration to the concentration in its blood of the other amino acids contained in the protein

B) Number of amino acids the rates blood will contain

C) Ratio of the rates blood-tyrosine concentration to its blood-leucine concentration.

D) Number of neurotransmitters of any kind that the rat will produce and release

68. It can be inferred from the passage that the authors initially held which of the following hypotheses about what would happen when they fed large amounts of protein to rats?

A) The rates tyrosine levels would increase less quickly than would their leucine levels

B) The rats' brain serotonin levels would not decrease

C) The rates brain tryptophan levels would decrease

D) The rats would produce more insulin

69. It can be inferred from the passage that which of the following would be LEAST likely to be a potential source of aid to a patient who was not adequately producing and releasing serotonin?

A) Meals that would elicit insulin secretion

B) Meals that had very low concentrations of leucine

C) Meals consisting almost exclusively of protein

D) Meals consisting almost exclusively of carbohydrates

Numbers: All numbers used are real numbers.

Figures: Position of points, regions, etc., can be assumed to be in the order shown; and angle measures can be assumed to be positive.

Lines shown as straight can be assumed to be straight.

Figures can be assumed to lie in a plane unless otherwise indicated.

Figures that accompany questions are intended to provide information useful in answering the questions. However, unless a note states that a figure is drawn to scale, you should solve these problems NOT by estimating sizes by sight or by measurement, but by using your knowledge of mathematics.

Directions (Qs. 70 to 74): **Choose the best or correct answer for each of the following questions from the alternative choices given numbered (A), (B), (C) and (D).**

70. R is the set of positive odd integers less than 50, and S is the set of the squares of the integers in R. How many elements does the intersection of R and S contain?

A) None B) Two C) Three D) Four

71. In an increasing sequence of 10 consecutive integers, the sum of first 5 integers in 560. What is the sum of the last 5 integers in the sequence?

A) 585 B) 580 C) 570 D) 595

72. Fermat primes and prime numbers that can be written in the fork $2^k + 1$, where K is an integer and a power of 2. Which of the following is NOT a Fermat prime?

A) 3 B) 5 C) 31 D) 257

73. On a scale that measures the intensity of a certain phenomenon, a reading of n + 1 corresponds to an intensity that is 10 times the intensity corresponding to a reading of n. On that scale, the intensity corresponding to a reading of 8 is how many times as great as the intensity corresponding to a reading of 3?

A) 5^{10} B) $8^{10} - 3^{10}$ C) 10^5 D) 50

74. From January 1, 2005 to January 1, 2006, the number of people enrolled in medical insurance increased by 15 percent. If the total number of people who had medical insurance was 45 million in January 1, 2006, how many million to the nearest million people had health insurance on January 1, 2005?

A) 38 B) 39 C) 40 D) 41

Directions (Qs. 75 to 80): **In each of the problems, a question is followed by two statements marked (A) and (B) containing certain data pertaining to the problem. You need to determine whether the data provided by statements are sufficient to answer the questions from four answer choices numbered (1), (2), (3) and (D). Choose**

(1) If Statement (A) ALONE is sufficient, but (B) alone is not sufficient

(2) If Statement (B) ALONE is sufficient, but Statement (A) alone is not sufficient.

(3) If BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient

(D) Statements (A) and (B) TOGETHER are NOT sufficient to answer.

75. How many of 30 job applicants have atleast 4 years' experience and a degree?

(A) Of the job applicants, 4 had atleast 4years' experience and 18 had degrees

(B) Of the job applicants, 3 had less than 4 years' experience and did not have degrees.

A) (A) alone, but (B) alone

B) (B) alone, but not (A) alone

C) Both statements together

D) (A) and (B) together are not sufficient

76. What is the value of $x^2 + y$?

(A) $x = 2y^3$

(B) $2y = 4$

A) (A) alone, but not (B) alone

B) (B) alone, but not (A) alone

C) Both statements together

D) (A) and (B) together are not sufficient

77. Is $x > y$?

(A) $x = y + 2$ (B) $\frac{x}{2} = y - 1$

A) (A) alone, but not (B) alone

B) (B) alone, but not (A) alone

C) Both statements together

D) (A) and (B) together are not sufficient

78. What is the number of members of Club Blue Fox who are atleast 35 years of age?

(A) Exactly $\frac{3}{4}$ of the members of Club Blue Fox are under 35 years of age.

(B) The 64 women in Blue Fox constitute 40% of the club's membership

A) (A) alone, but not (B) alone

B) (B) alone, but not (A) alone

C) Both statements together

D) (A) and (B) together are not sufficient

79. What is value of xy?

(A) $y = x + 1$

(B) $y = x^2 + 1$

A) (A) alone, but not (B) alone

B) (B) alone, but not (A) alone

C) Both statements together

D) (A) and (B) together are not sufficient

80. If x and y are positive is $\frac{x}{y} > 1$?

(A) $xy > 1$ (B) $x - y > 0$

A) (A) alone, but not (B) alone

B) (B) alone, but not (A) alone

C) Both statements together

D) (A) and (B) together are not sufficient

ANSWERS

1-C; 2-A; 3-D; 4-A; 5-B; 6-C; 7-B; 8-D; 9-B; 10-D; 11-C; 12-A; 13-D; 14-C; 15-B; 16-B; 17-A; 18-B; 19-C; 20-B; 21-C; 22-C; 23-B; 24-C; 25-D; 26-A; 27-D; 28-C; 29-C; 30-B; 31-A; 32-B; 33-D; 34-D; 35-B; 36-D; 37-C; 38-D; 39-C; 40-B; 41-D; 42-D; 43-B; 44-B; 45-C; 46-D; 47-A; 48-A; 49-C; 50-B; 51-A; 52-C; 53-A; 54-D; 55-B; 56-A; 57-B; 58-A; 59-C; 60-A; 61-C; 62-C; 63-C; 64-D; 65-B; 66-B; 67-A; 68-B; 69-C; 70-D; 71-A; 72-C; 73-C; 74-B; 75-C; 76-C; 77-A; 78-C; 79-D; 80-B.