COMMON ADMISSION TEST

SECTION-I

Directions Q. 1 to 5: Select the option that best replaces the underlined part.

1. British Airspace has been <u>focusing on building European links</u>.
   a. concentrating on creating European links
   b. pursuing ways of building European connectivity.
   c. stressing on building European links
   d. focusing on forging European links
2. I think Ronnie had something useful to say, however, <u>he was unable to communicate his viewpoint to a sceptical audience.</u>
   a. he did not change the minds of a knowledgeable public
   b. the people were willing to accept his ideas
   c. he failed to convince a suspicious congregation
   d. he could not convince the doubting audience
3. The eighth-century revival of Byzantine learning is an <u>inexplicable phenomenon</u>, and its economic and military precursors have yet to be discovered.
   a. a phenomenon yet to be discovered
   b. a phenomenon incompletely explained.
   c. an inexplicable phenomenon
   d. an unidentifiable phenomenon.
4. Bureaucrats <u>may also well be advised</u> to deal with service headquarters as representatives of the government and not behave as their bosses.
   a. may also well be advised
   b. should know their limits when they have
   c. may have to remember
   d. may need to learn how
5. Many people mistake familiar for a vulgar style, and suppose that to write without affectation <u>is to write a random speed</u>.
   a. is to write at random
   b. is to write randomly
   c. is to write fast
   d. is to do speed writing.

Directions for Q. 6 to 15: Fill in the blanks of the following sentences using the most appropriate word or words.

6. In pursuance of their decision to resist what they saw as anti-labour policies, the company employee's union launched agitation to _____.
   a. show their virility
   b. reaffirm their commitment to the company
   c. bring down the government
   d. demonstrate their strength
7. The safest general characterisation of the European philosophical tradition as it has developed up to now, with all its diverse proponents, is that it consists of a Plato.
   a. series of footnotes to
   b. set of prologues to
   c. collection of chapters on
   d. string of commentaries to
8. The interest generated by the soccer World Cup is _____ compared to the way cricket _____ the nation.
   a. milder, fascinates
   b. lukewarm, electrifies
   c. tepid, inspires
   d. unusual, grips
9. No doubt, it was our own government but it was being run on borrowed ideas, using _____ solutions.
   a. worn out
   b. second hand
   c. impractical
   d. appropriate
10. The telephone symbolises that awkward _____ in all communication technologies; while it _____ to bring us together, it keeps us apart.
    a. paradox, needs
    b. irony, intends
    c. paradox, tries
    d. irony, wishes
11. Simple arithmetic tells us that there is more _____ than_____.
    a. imitation, innovation
    b. improvisation, improvement
    c. impracticality, knowledge
    d. improbability, probability
12. To a greater or lesser degree all the civilised countries of the world are made up of a small class of rulers, _____ and of a large class of subjects, _____.

of

a. formed by a small minority, who are uncivilised.
b. powerfully corrupt, pointless crusaders.
c. corrupted by too much power, corrupted by too much passive obedience.
d. who are ruled, who ruled.

13. Science is a sort of news agency comparable _____ to other news agencies.
a. Principally
b. in principle
c. in principal
d. in spirit and form

14. Most political leaders acquire their position by causing a large number of people to believe that these leaders are _____ by altruistic desires.
a. Actuated
b. Convinced
c. Categorized
d. Led

15. Every one will admit that swindling one's fellow beings is a necessary practice; upon it is based really sound commercial success: _____
a. sell what you cannot buy back
b. buy what you will sell to another at a higher price.
c. buy cheap and sell dear
d. sell what you can: do not buy from a competition.

Directions Q. 16 to 20:

Arrange sentences A, B, C, D between sentences 1 and 6 to form a logical sequence of six sentences.

16. Arrange sentences A, B, C, D between sentences 1 and 6 to form a logical sequence of six sentences.
1. Why are horses the same?
A. It may be old and lame, and in time it will die.
B. A particular horse 'flows', naturally.
C. But there is something all horses have in common.
D. You probably don't think they are at all.
6. But the 'form' of the horse is eternal and immutable.
a. DCAB
b. CABD
c. CBDA
d. DCBA

17. Arrange sentences A, B, C, D between sentences 1 and 6 to form a logical sequence of six sentences.
1. Buddhism is a way to salvation.
A. But Buddhism is more severely analytical.
B. In the Christian tradition there is also a concern for the fate of human society conceived as a whole, rather than merely as a sum or network of individuals.
C. Salvation is a property, or achievement, of individuals.
D. Not only does it dissolve society into individuals; the individual in turn is dissolved into component parts and instants, a stream of events.
6. In modern terminology, Buddhist doctrine is reductionist.
a. BCAD
b. ADBC
c. CBAD
d. CDAB

18. Arrange sentences A, B, C, D between sentences 1 and 6 to form a logical sequence of six sentences.
1. Matrilineal systems of land inheritance advantaged women in many respects, especially in granting them economic and social security.
A. Women, in particular, were profoundly affected by these changes.
B. The large joint family estates came to be partitioned; there was an increasing penetration of market forces and patriarchal ideologies spread in influence.
C. These systems, however, did not remain fixed over time.
D. Interventions by the colonial and post-colonial states, and the processes of social change which these set in motion, eroded customary practices.
6. At the same time, their customary exclusion from major authority in public bodies meant that they were unlikely to be the ones directing the changes.
a. BDCA
b. CDBA
c. CDAB
d. CADB

19. Arrange sentences A, B, C, D between sentences 1 and 6 to form a logical sequence of six sentences.
1. The problem of improving Indian agriculture is both a sociological and an administrative one.
A. It also appears that there is a direct relationship between the size of a state and development.

of

B. The issues of Indian development, and the problems of India's agricultural sector, will remain with us long into the next century.

C. Without improving Indian agriculture, no liberalisation and delicensing will be able to help India.

D. At the end of the day, there has to be a ferment and movement of life and action in the vast segment of rural India.

6. When it starts marching, India will fly.

a. DABC
b. CDBA
c. ACDB
d. ABCD

20. Arrange sentences A, B, C, D between sentences 1 and 6 to form a logical sequence of six sentences.

1. A market for Indian art has existed ever since the international art scene sprang to life.

A. But interest in architectural concepts is an unanticipated fallout of the festivals of India of the '80s, which were designed to increase exports of Indian crafts.

B. Simultaneously, the Indian elite discarded their synthetic sarees and kitsch plastic furniture, and a market came into being.

C. Western dealers, unhappy in a market afflicted, by violent price fluctuations and unpredictable profit margins, began to look east, and found cheap antiques with irresistible appeal.

D. The fortunes of the Delhi supremos, the Jew Town dealers in Cochin and myriad others around the country were made.

6. A-chain of command was established, from the local contacts to the provincial dealers and up to the big boys, who entertain the Italians and the French, cutting deals worth lakhs in warehouse worth crores.

a. BCAD
b. DCBA
c. ACBD
d. CABD

Directions: Q. 21 to 31:

Rearrange these parts to form a coherent paragraph.

21.

A. However, the real challenge today is unlearning, which is much harder.

B. But the new world of business behaves differently from the world in which we grew up.

C. Learning is important for both people and organisations.

D. Each of us has "mental model" that we've used over the years to make sense.

a. DBCA
b. CADB
c. DACB
d. CBDA

22.

A. A large number of intellectuals believe that the North is using its military and economic powers to force unequal contracts on the South.

B. The make-believe ethical issue of the sanctity of law camouflages the unethicality of the entire transaction, which is a travesty of the ethical concept of the greatest good for the greatest number.

C. Once these contracts are made, the North uses the facade of legality and ethics to pindown the South.

D. Thus it suffers from the flaw that the law — one of the useful means to implement ethics — has fouled the ethicality of the ends.

a. DACB
b. CBDA
c. ACBD
d. BDAC

23.

A. The fact the he could find absolutely nothing to substantiate their wild claims made no difference.

B. We always gave the poor man a cup of tea, and he grew quite fond of some of the animals.

C. The neighbours, now thoroughly indignant, kept bombarding the local health authorities.

D. On an average, twice a week, the poor inspector was forced to come up to the house.

a. DBAC
b. CDAB
c. ADBC
d. CADB

24.

A. Alex had never been happy with his Indian origins.

of

B. He set about rectifying this grave injustice by making his house in his own image of a country manor.
C. Fate had been unfair to him; if he had his wish, he would have been a count or an Earl on some English estate, or a medieval monarch in a chateau in France.
D. This illusion of misplaced grandeur, his wife felt, would be Alex's undoing.

a. ACDB
b. ABDC
c. ACBD
d. DABD

25.

A. The influence is reflected the most in beaded evening wear.
B. Increasingly, the influence of Indian's colours and cuts can be seen on western styles.
C. And even as Nehru jackets and jodhpurs remain staples of the fashion world, designers such as Armani and McFadden have turned to the sleek silhouette of the churidar this year.
D. Indian hot pink, paprika and saffron continue to be popular colours year in and year out.

a. BADC
b. ABCD
c. BCAD
d. DABC

26.

A. Such a national policy will surely divide and never unite the people.
B. In fact, it suits the purpose of the politicians; they can drag the people into submission by appealing to them in the name of religion.
C. In order to inculcate the unquestioning belief they condemn the other states which do not follow their religion.
D. The emergence of the theocratic states where all types of crimes are committed in the name of religion, has revived the religion of the Middle Ages.

a. ABCD
b. DBCA
c. DBAC
d. CDAB

27.

A. His left hand concealed a blackjack, his right hand groped for the torch in his pocket.
B. The meeting was scheduled for the nine o'clock, and his watch showed the time to be a quarter to nine.
C. The man lurked in the corner away from the glare of the light.
D. His heart thumped in his chest, sweat beads formed themselves on his forehead, his mouth was dry.

a. CABD
b. BDAC
c. BADC
d. ABCD

28.

A. The Director walked into the room and took a look around the class.
B. Mitch wanted to scream - the illogicality of the entire scene struck him dumb.
C. The managers stared at him with the look of fear that no democratic country should tolerate in its people.
D. Mitch walked out of the room - it was his irrevocable protest against an insensible and insensitive situation.

a. ACBD
b. BDAC
c. BCAD
d. ABCD

29.

A. The establishment of the Third Reich influenced events in American history by starting a chain of events which culminated in war between Germany and the United States.
B. The Neutrality Acts of 1935 and 1936 prohibited trade with any belligerents or loans to them.
C. While speaking out against Hitler's atrocities, the American people generally favoured isolationist policies and neutrality.
D. The complete destruction of democracy, the persecution of Jews, the war on religion, the cruelty and barbarism of the allies, caused great indignation in this country and brought on fear of another World War.

a. ABCD
b. CBDA
c. CDBA
d. ADCB

30.

A. An essay which appeals chiefly to the intellect is Francis Bacon's 'Of Studies'.
B. His careful tripartite division of studies expressed succinctly in aphoristic prose,

demands the complete attention of the mind of the reader.

C. He considers studies as they should be; for pleasure, for self-improvement, for business.

D. He considers the evils of excess study: laziness, affectation, and precocity.

a. DCBA
b. ABCD
c. CDBA
d. ACBD

31.

A. By reasoning we mean the mental process of drawing an inference from two or more statements or going from the inference to the statements which yield that inference.

B. So logical reasoning covers those types of questions which imply drawing an inference from the problems.

C. Logic means, if we take its original meaning, the science of valid reasoning.

D. Clearly, for understanding arguments and for drawing the inference correctly it is necessary that we should understand the statements first.

a. ACBD
b. CABD
c. ABCD
d. DBCA

Directions: 32 to 36. In each of the following sentences the main statement is followed by four sentences each. Select the pair of sentences that relate logically with the given statement.

32. Either Mona is sick or she is careless.

A. Mona is not sick
B. Mona is not careless.
C. Mona is sick
D. Mona is careless.

a. AB
b. AD
c. BA
d. DC

33. 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

34. 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

35. 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.

36. 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.

DIRECTIONS for questions 37 to 40: Each question has a set of four statements. Each statement has three segments. Choose the alternative where the third segment in the statement can be logically deduced from the preceding two.

37.

A. Some apples are sour; This fruit is an apple; This fruit is sour.

B. Sita is a nurse; All nurses are tall women; Gita is a tall woman.

C. Army officers are smart; Air force officers are smart; Military officers are smart.

D. No animal likes fire; Aardvarks are animals; Aardvarks do not like fire.

a. B only
b. C only
c. D only
d. None of these

38.

A. No S is P; All X is S; No X is P

of

B. No S is P; All X is S; All X is P.
C. Some S is not P; Some X is S; Some X is not P.
D. Some S is not P; All X is 5; All X is not P.

a. A only
b. A and B
c. C only
d. D only

39.

A. No sun is not white; All moon is sun; All moon is white.
B. All windows are open; No open space is allocated; All window is closed space.
C. Some As can sleep late; Some Bs wake up early; Some As wake up early.
D. No German can fire; All Americans bombard; Both Germans and Americans can fight.

a. A only
b. B only
c. C only
d. D only

40.

A. All Ts are square; All square are rectangular; All Ts are rectangular.
B. Some fat are elongated; Some elongated things are huge; some fat are huge.
C. Idiots are bumblers; Bumblers fumble; Idiots fumble.
D. Water is good for health; Health foods are rare; Water is rare,

a. D only
b. C only
c. Both A & C
d. All of the above.

DIRECTIONS for questions 41 to 50: Read each of the short passages given below and answer the questions that follows it.

41. The Kolahal party had to fight the Golmal party bitterly to win the mayoral elections. One of the main features of its campaign was that it would make public all the papers related to a scandal during the regime of the Golmal party. After the victory, however, the new mayor got busy introducing many schemes, both liked and not liked by the public. The Golmal party made only mild protests but refrained from tabling a serious no-confidence motion in the council which it could have won by obtaining the support of the independent members.

Which of the following statements, if true, implies that the Kolahal party is blackmailing the Golmal party?

a. The paper mentioned in the election campaign are prepared and ready.
b. Some members of the public disliked the reforms made by the new mayor.
c. People complained about collusion between the two parties.
d. Independent members were not keen on supporting the Golmal party.

42. Cellular phone services are being provided by two companies in each telecom circle. These companies were awarded the contracts based on the licence fees they agreed to pay the government and were selected on a competitive basis. Cellular phone service providers have found that their profits are much less than they expected - in fact in most cases they are losing money.

Which of the following can be inferred from the above passage?

a. All the cellular phone service providers have been operating inefficiently.
b. The government was wrong in allowing private provision of cellular services.
c. Cellular service providers have been unable to match performance to plan.
d. Paging services have eaten into the revenue of the cellular services.

43. Organisations are often defined as groups of people who come together to pursue a common goal. But more often than not, goals diverge as much as they converge, making the rationality of the overall organisation no more than an elusive ideal. Beneath the collective irrationality, however, organisations are often operating in a way that is eminently rational from the standpoint of the individuals, groups and coalitions directly involved.

Which of the following can be inferred from the above passage?

a. If all employees of an organisation pursue their individual goals, one can never have an organisation that behaves rationally.
b. Although conceptually an organisation may appear to be irrational — behaviours of individuals, groups and coalitions in the organisation may be rational.
c. As individuals, groups or coalitions in an organisation pursue their own interests, the conceptual issues of rational behaviour get blurred.
d. Since people are essentially irrational, the ideal of building a rational organisation is elusive.

44. BSE officials point out that ever since on-line trading took off, surveillance isn't difficult any more. Sophisticated software has been installed for continuous monitoring of stock prices. If that is so, how could the unnatural spurt in prices of operator-driven stock go unnoticed? There does not seem to be regular checks or supervision.

Which of the following can be inferred from the above passage?

a. The software used at BSE is not as sophisticated as it is claimed to be.
b. The operators can drive stock prices crazy irrespective of the kind of software installed.
c. Nobody can ever predict how stock prices move in the market.
d. Having the infrastructure in place is one thing, but proper utilisation is another.

45. At a movie theatre in Bangalore, last year, the proprietor decided to sell about one-third of his total balcony capacity on the Internet. The response was tremendous. One every new release, the entire on-line capacity was sold out. Today, there are at least 2 million educated and well-heeled consumers in India who are ordering everything from cinema tickets to paan and tennis racquets to shirts from the comfort of their offices or homes.

Which of the following can be inferred from the above passage?

a. There is a growing breed of computer-savvy consumers in Bangalore.
b. It is more comfortable to purchase movie tickets through the Internet.
c. A retailing revolution is underway in India with the advent of the Internet.
d. The proprietor of the theatre can profitably decide to sell all the balcony tickets through the Internet.

46. The dominant modern belief is that the soundest foundation of peace would be universal prosperity. One may look in vain for historical evidence that the rich have regularly been more peaceful than the poor, but it can be argued that they have never felt secure against the poor; that their aggressiveness stemmed from fear; and that the situation would be quite different if everybody were rich.

It can be inferred from the above passage that:

a. Most aggression in the world stems from the desire of the haves to defend themselves against the have-nots.
b. Prosperity as foolproof measure of peace can no longer be accepted.
c. Both a and b.
d. Neither a nor b.

47. The effect produced on the mind by travelling depends entirely on the mind of the traveller and on the way in which he conducts himself. The chief idea of one very common type of traveller is to see as many objects of interest as he possible can. If he can only after his return home say that he has seen such and such a temple, castle, picture gallery, or museum, he is perfectly satisfied. Far different is the effect of travels upon those who leave their country with minds prepared by culture to feel intelligent admiration for all the beauties of nature and art to be found in foreign lands. When they visit a new place, instead of hurrying from temple to museum to picture gallery, they allow the spirit of the place to sink into their minds, and only visit such monuments as the time they have at their disposal allows them to contemplate without irreverent haste.

It can be inferred from the above passage that:

a. The writer prefers the second type of traveller.
b. The first type of traveller is the lay traveller who does not understand the worth of any place he travels to
c. The objective of the second type of traveller is not to see much, but to see well.
d. All of the above.

48. Whether we look at the intrinsic value of our literature. or at the particular situation of this country, we shall see the strongest reason to think that of all foreign tongues the English tongue is that which would be the most useful to our native subjects.

It can be inferred that.

a. The speaker is a die-hard colonist.
b. The speaker has the good of the nation at heart.
c. The speaker is addressing an issue related to a-colonial empire.
d. None of the above.

49. Where the film Bombay loses out is where every commercial film congenitally goes away - becoming too simplistic to address serious issues and failing to translate real life to reel.

Based on the information in the passage, it can be inferred that:

a. The film's director aimed at recreating real life on the silver screen.
b. The film was too simplistic for the audience's taste.
c. The film was successful in spite of its shortcomings.
d. None of the above.

50. Aspiration is nothing new. Neither is the debate over what the Indian middle class is, what it wants and what it buys. Since the mid-80s, that has been the focus of the economic policy papers, so called pro and anti-poor budgets and marketing strategies that have successfully broken the barrier to urban selling and reached deeper into rural India with increasing income levels and aspirations.

Based on the above passage it can be inferred that

a. The Indian middle class has been the focus of economic policies for along time.
b. The Indian middle class has graduated from being the 'deprived' middle class to the 'pampered' middle class.
c. Both a and b.
d. Neither a nor b.

SECTION-II

51. You have reached Utopia where you find tow kinds of precious stones, rubies and emeralds. The worth of a ruby and that of an emerald are Rs. 4 crores and Rs. 5 crores respectively while their weights are 0.3 kg and 0.4 kg respectively. You have a bag that can carry a maximum of 12 kgs. How many rubies and emeralds would you carry such that their total value is maximised?

a. 20 rubies and 15 emeralds
b. 8 rubies and 24 emeralds
c. 0 rubies and 30 emeralds
d. None of the above

52. A colony of bacteria is a container grows by each bacterium splitting into eight next generation bacteria. However, because of environmental conditions only 50% of the bacteria in a generation can split as above. A colony of first generation bacteria was put in the container and it was found that the number of seventh generation bacteria was 4096 million. What was the size of the first generation population initially put in the container?

a. 2 million
b. 8 million
c. 1 million
d. 4 million

DIRECTIONS for questions 53 and 54: A factory produces a product (measured in cubic feet) over seven days as per the following schedule:

Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
150	180	120	250	160	120	150

The finished goods are to be transported to the market by a truck having a capacity of 200 cubic feet. Any finished goods (ready at the end of the day) retained overnight at the factory will incur a storage cost of Rs. 5 per cubic foot for each night of storage. The hiring cost for the truck is Rs. 100 per day.

53. If the total cost of transportation and storage is to be minimised, the truck should operate on

a. 2nd, 4th, 6th and 7th days.
b. only the 7th day
c. 2nd, 4th, 5th and 7th days
d. None of the above

54. If the storage cost reduces to Rs. 0.80 per cubic foot per night, the truck should operate on

a. 2nd, 4th, 6th and 7th days
b. only the 7th day
c. 2nd, 4th, 5th and 7th days
d. None of the above

Directions: each of the following should be solved independently.

55. A company has a job to prepare certain number of cans and there are three machines A, B, C for this job. A can complete the job in 3 days, B can complete the job in 4 days and C can complete the job in 6 days. How many days the company will take to complete the job if all the machines are used simultaneously?

a. 4 days
b. 4/3 days
c. 3 days
d. 12 days.

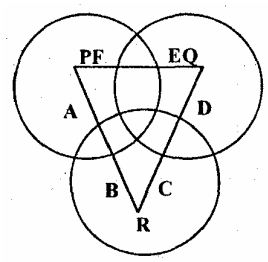
56. n^3 is odd. Which of the following statement(s) is/are true.

A. n is odd
B. n^2 is odd
C. n^2 is even

a. A only
b. B only
c. A and B only
d. A and C only.

57. Three circles, each of radius 20 and centres at P, Q, R. Further, AB=5, CD=10 and EF=12. What is the perimeter of the triangle PQR?

of



a. 60 cm
b. 81 cm
c. 93 cm
d. 87 cm

Directions for Q. 58 to 60.

The following operations are defined for real numbers:

a # b = a + b if a and b both are positive

else a # b = 1.

a ∇ b = $(ab)^{a+b}$ if ab is positive

else a ∇ b = 1.

58. The value of $\frac{(2\#3)\#((-1)\Delta 5)}{(1\Delta 2)\#((-1)\#5)}$ is

a. 2/3
b. 1/2
c. 1/3
d. None of these

59. The value of

$$\frac{((1\#1)\#2)-(-10^{1.3}\#\log_{10}0.1)}{2\Delta 1}$$ is

a. $(4-10^{1.3})/2$
b. 1/8
c. 3/8
d. 15/8

60. Given that $\frac{(x\#(-y))}{(-x\Delta y)}$ is equal to 3/8, for two integers x and y, which of the following statements is true:

a. Both x and y are negative
b. x = 1 and y =2
c. x<0, y>0
d. x>0, y<0

Directions: Each of the following should be solved independently.

61. $(BE)^2$ = MPB, where B, E, M & P are distinct integers, then M ?

a. 2
b. 3
c. 9
d. None of these

62. Five digit numbers are formed using only 0, 1, 2, 3, 4 exactly once. What is the difference between the maximum and minimum number that can be formed?

a. 19800
b. 41976
c. 32976
d. None of these

63. How many numbers can be formed from 1, 2, 3, 4, 5 (without repetition), when the digit at the units place must be greater than that in the tenth places?

a. 54
b. 60
c. 5!/3
d. 2 × 4!

64. Distance between A and B is 72 km. Two men started walking from A and B at the same time towards each other. The person who started from A travelled uniformly with average speed 4 kmph. While the other man travelled with varying speeds as follows: In first hour his speed was 2 kmph. in the second hour it was 2.5 kmph, in the third hour it was 3 kmph, and so on. When will they meet each other?

a. 7 hours
b. 10 hours
c. 35 km from A
d. midway between A & B

65. P, Q, R, S are four statements. Relation between these statements is as follows:

If P is true then Q must be true.

If Q is true then R must be true.

If S is true then either Q is false or R is false. Then which of the following must be true?

a. If P is true then S is false
b. If S is false then Q must be true
c. If Q is true then P must be true
d. If R is true then Q must be true

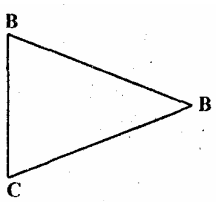
Directions for Q. No. 66 & 67

A cow is tethered at A by a rope. Neither the rope nor the cow is allowed to enter the triangle ABC.

m∠A=30°.

l(AB)=l(AC)= 10m.

l(BC)=6m.



66. What is the area that can be grazed by the cow if the length of the rope is 8 m?
   a. 133 1/6 π sq.m
   b. 121 π sq.m
   c. 132 π sq.m
   d. 176/3 p sq.m

67. What is the area that can be grazed by the cow if the length of the rope is 12 m?
   a. 133 1/6 p sq.m
   b. 121 p sq.m
   c. 132 p sq.m
   d. 176/3 p sq.m

Directions for Q. No. 68 to 70.

A, B, C, D are to be seated in a row. But C and D cannot be together. Also B cannot be at the third place.

68. Which of the following must be false?
   a. A is at the first place
   b. A is at the second place
   c. A is at the third place
   d. A is at the fourth place

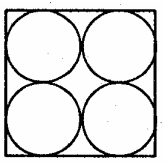
69. If A is not at the third place, then C has which of the following option only?
   a. the first place only
   b. the third place only
   c. the first and the third place only
   d. any of the places

70. If A and B are together then which of the following must be necessarily false?
   a. C is not at the first place
   b. A is at the second place
   c. D is at the first place
   d. C is at the first place

Directions : Each of the following should be solved independently.

71. A man engaged a servant on the condition that he would pay him Rs. 90 and also give him a turban after service of one year. He served only for nine months and received a turban and Rs. 65. Find the value of the turban in rupees.
   a. 10
   b. 9
   c. 0
   d. 2.50

72. Four identical circular coins are placed inside the square ABCD as in the following diagram:



If for each coin, (area/circumference) = (circumference/ area) then the area not occupied by the corns in ABCD is
   a. 8(4-π)
   b. 16(8-π)
   c. 16(4-π)
   d. None of these

73. Three wheels can complete respectively 60, 36, 24 revolutions per minute. There is a red spot on each wheel that touches the ground at time zero. After how much time all these spots will simultaneously touch the ground again?
   a. 5/2 seconds
   b. 5/3 seconds
   c. 5 seconds
   d. 7.5 seconds

74. A certain number when divided by 899 leaves the remainder 63. Find the remainder when the same number is divided by 29.
   a. 5
   b. 4
   c. 1
   d. Cannot be determined.

75. A is the set of positive integers such that when divided by 2,3,4,5,6 leaves the remainders 1,2,3,4,5 respectively. How many integers between 0 and 100 belong to set A?
   a. 0
   b. 1
   c. 2
   d. None of these

Directions for Q. 76 to 78: Ramesh, Ram, Kareem and Mohan collected coins of different countries.

A. They collected 100 altogether.
B. None collected less than 10.
C. Each collected an even number.
D. Each collected a different number.

76. Based on the above, we can say that the number of coins collected by the boy who collected the most could not have exceeded
   A. They collected 100 altogether.
   B. None collected less than 10.
   C. Each collected an even number.
   D. Each collected a different number.
   a. 64
   b. 2154

of

c. 60
d. 58

77. If Ramesh collected 54 coins, we can say (on the basis of information obtained so far) that the difference in numbers collected by the boy who collected the most and the boy who collected the second most should he at least.
A. They collected 100 altogether.
B. None collected less than 10.
C. Each collected an even number.
D. Each collected a different number.
a. 30
b. 18
c. 26
d. 12

78. Ramesh collected 54 coins. If Kareem collected two more than double the number collected by Mohan, the number collected by Kareem was
A. They collected 100 altogether.
B. None collected less than 10.
C. Each collected an even number.
D. Each collected a different number.
a. 10
b. 30
c. 22
d. 26

Directions Q 79-80: Suppose shirts of only three colours, namely, red, blue and green are available. Further suppose Amar does not wear a red shirt. Akbar does not wear a green shirt and Anthony does not wear a blue shirt.

79. If Akbar and Anthony wear shirts of the same colour then which of the following is necessarily true?
a. The colour of Amar's shirt is not blue
b. The colour of Amar's shirt is definitely blue
c. The colour of Amar's shirt is not green
d. None of the above is necessarily true

80. If any two of them wear shirts of the same colour then how many of the following statements are definitely false?
A. The colour of Anthony's shirt is red and that of Akbar's shirt is green.
B. The colour of Anthony's shirt is red and that of Amar's shirt is blue.
C. The colour of Akbar's shirt is blue and that of Anthony's shirt is red.
D. The colour of Amar's shirt is blue and that of Akbar's shirt is red.
a. 0
b. 2
c. 1
d. 3

Directions: Each of the following should be solved independently.

81. The number of students who have opted the subjects A, B, C are 60, 84, 108 respectively. The examination is to be conducted for these students such that only the students of the same subject are allowed in one room. Also the number of students in each room must be same. What is the minimum number of rooms that should be arranged to meet all these conditions?
a. 28
b. 60
c. 12
d. 21

82. How many five digit numbers can be formed using 2, 3, 8, 7, 5 exactly once such that the number is divisible by 125?
a. 0
b. 1
c. 4
d. 4

83. I have one rupee coins, fifty paise coins and twenty five paise coins. The number of coins are in the ratio 2.5 : 3: 4. If the total amount with me is Rs. 210, find the number of one rupee coins:
a. 90
b. 85
c. 100
d. 105

84. My ten year old nephew Debu adores chocolates, likes biscuits, and hates apples. One evening I took him to a super market and told him that he could buy as many chocolates as he wanted, but then he should have twice that number of biscuits and finally buy more apples than the total number of chocolates and biscuits. The chocolates cost Re. 1 per piece and apples are twice as expensive; the price of four biscuits matches the price of one apple. Which of the following can possibly be the amount spent by me on Debu's evening snacks?
a. Rs. 34
b. Rs. 16
c. Rs. 25
d. None of these

Directions for Q. 85 & 86: A company imports component A from Germany and component B from USA. If then assembles them along with other components to produce a machine used in a chemical process. Component A contributes 30% to the production cost and component B contributes 50% to the production cost. The current practice is to sell the machine at a price that is 20% over the production cost. Due to foreign exchange fluctuations the German Mark has become costlier by 30% and the US Dollar by 22%. But the company is unable to increase the selling price by more than 10%.

85. The current margin of profit is:
   a. 10%
   b. 15%
   c. 12%
   d. 8%

86. Suppose the US dollar becomes cheaper by 12% of its original value, and the German Mark becomes costlier by 20% of its original value. To achieve a profit margin of 10%, the selling price must exceed the production cost by
   a. 10%
   b. 20%
   c. 12%
   d. 15%

Directions for Q. 87 to 90:

Kamal Babu came home just after judging a beauty contest where there were four semi-finalists, Ms. Andhra Pradesh, Ms. Uttar Pradesh, Ms. Maharashtra and Ms. West Bengal. His wife was very keen on knowing who the winner was and Kamal Babu replied immediately that it was the one wearing the yellow saree. When his wife asked for more details, he gave the following information:

- The four girls were wearing sarees of different colours (yellow, red green, white) and the runner- up was wearing green.
- The four girls were sitting in a row, and Ms. West Bengal was not sitting at either end.
- There was only one runner-up and she was sitting next to Ms. Maharashtra.
- The girls wearing yellow and white sarees occupied the seats at either end.
- Ms. West Bengal was neither the winner nor the runner-up.
- Ms. Maharashtra was wearing white.
- The winner and the runner-up were not sitting next to each other.
- The girls wearing the green saree was not Ms. Andhra Pradesh.

Answer the following questions based on the above information:

87. What was the colour of the saree that Ms. Andhra Pradesh was wearing?
   a. White
   b. Yellow
   c. Red
   d. Cannot be determined

88. Between which two was Ms. West Bengal sitting?
   a. Ms. Andhra Pradesh and Ms. Maharashtra
   b. Ms. Andhra Pradesh and Ms. Uttar Pradesh
   c. Ms. Uttar Pradesh and Maharashtra
   d. Cannot be uniquely determined

89. Who was wearing the red saree?
   a. Ms. Andhra Pradesh
   b. Ms. Uttar Pradesh
   c. Ms. West Bengal
   d. Cannot be uniquely determined

90. What was the colour of the saree that Ms. Uttar Pradesh was wearing?
   a. White
   b. Green
   c. Red
   d. Yellow

Directions: each of the following should be solved independently:

91. I started climbing up the hill at 6 a.m. and reached the temple at the top at 6 p.m. Next day I started coming down at 6 a.m. and reached the foothill at 6 p.m. I walked on the same road. The road is so short that only one person can walk on it. Although I varied my pace on my way, I never stopped on my way.
   Then which of the following must be true?
   a. My average speed downhill was greater than that uphill.
   b. At noon, I was at the same spot on both the days.
   c. There must be a point where I reached at the same time on both the days.
   d. There cannot be a spot where I reached at the same time on both the days.

92. What is the digit in the unit place of 2^{51}?
   a. 2
   b. 8
   c. 1
   d. 4

93. From a barrel containing 500ml of alcohol, 3 cups of alcohol are poured into a barrel

containing 500ml of water. After mixing the contests well, 3 cups of the mixture are poured into the barrel of alcohol. The percentage of water into the barrel of alcohol. The percentage of water in tie barrel of alcohol and the percentage of alcohol in the barrel of water are then compared. Which one of the following is true?

a. the former is greater than the latter
b. The two are equal
c. The latter is greater than the former
d. Cannot be determined

94. Consider a 99 digit number created by writing side by side the first fifty four natural number as follows:

12345678910111213…….5354

The above number when divided by 8 will leave a remainder of

a. 6
b. 4
c. 2
d. 0

95. A, B, C, D, ……., X, Y, Z are the players who participated in a tournament. Everyone played with every other player exactly once. A win scores 2 points, a draw scores 1 point and a lose scores 0 points. None of the matches ended in a draw. No two players scored the same score. At the end of the tournament, the ranking list is published which is in accordance with the alphabetical order. Then.

a. M wins over N
b. N wins over M
c. M does not play with N
d. None of these

SECTION-III

Directions: Read the following passages and answer the questions based on each.

PASSAGE-1

Every lover of words knows that these little symbolic units of meaning can be as contradictory as sub-atomic particles sometimes are. This may well be nature's quixotic way of laughing at our desperate need to explain everything. It gives us a full stop, but watches helplessly, as we expand it into three dots and continue to search.

Although the measurement of the velocity of subatomic particles precludes the. measurement to their position and vice versa, it hasn't stopped nuclear physicists from trying from searching, from attempting to pin down, to explain. And it is important.

In a book on quantum physics called In Search of Schrodinger's Cat, John Gribbin says something very fascinating. If a mythical god with a magical pair of infinitesimally small pliers started the task of removing one atom from a molecule of hydrogen (if I remember correctly) every second from the time of the Big Bang today, it would take another million years for him or her to complete the task. Phew!

But it is still important to try. Why? If everything is so small and the now proved quantum world is essentially indefinable, why do we go on trying to define? Because we must. It is as important to be rigorous and empirical as to accept the indefinable, Lest we forget, it is through absorption in the act of definition that we first encountered the indefinable. And it is still found there more easily than anywhere else.

But for the effort to define, how would find the indefinable? But for the setting of limits, would the notion of the limitless have ever arisen? Didn't William Blake once remind us that we never know what is enough; unless we have known what is more than enough.

So, when we analyse words, they are paradoxical, as anything self-referential is. whether it is the language of mathematics or the language of words, self-reference engenders paradox. But one wonders why this is a cause of concern for some people, who would prefer no shades of grey.

Words are very close to what Planck called "quanta" though they are not literally packets of meaning; they are the paradoxical verbal equivalent, "receptacles of meaning". Little drawers if you like, into which we can insert fresh meanings that expand, limit or even contradict the accepted meaning of the word or phrase.

When we say, "I'll believe you!" for instance, we means the exact opposite. As, indeed, when we say something is "bad" in Black American language. because it means "good".

The original meaning of the word is like a reference point on a matrix. Good, if we use. its definition as a working hypothesis. But very dangerous, if we take it as full and final, irrevocable statement of what it sets out to describe.

Why, one may ask, give the world a meaning at all, if accepting it is suspect? And why embark on the act of definition at all if the result of the definition is insignificant?

Like many wonderful and rewarding things in this mysterious world, It is not either/or but and/plus. It is like asking why we learnt to crawl, if all we are going to do is unlearning it to walk? And further, when on occasion, we are required to crawl in later life are we regressing?

Learning is a process, not a thing. If we must look a it as a thing we must look at it as lying-sitting-standing-crawling- walking-running.

To define words, and define them exactly, is very important at the outset. When one is learning a

language and even through the process of getting language and even through the process of getting familiar with it, definitions and boundaries are crucial, just as following a broad road to a place is critical before we know our way there. Once we do the rules aren't important; once we have found a dozen shorter or pleasanter ways to the place, the highway may be of little use to us.

Once we have a certain command of the language, however, rules are meant to be broken. Particularly if we are riding the crazy roller coaster of the English language. It is then what we thought was a packet turns out to be a receptacle. In the clearer light of day, when there is less confusion and obscurity, what appeared to be a serpent in the dusty light, is now quite clearly rope.

In Alice Wonderland, Humpty Dumpty says it quite brilliantly.

"I don't know what you mean by glory', "Alice said Humpty Dumpty smiled contemptuously.

"Of course you don't—till I tell you. I meant there's a nice knock-down argument for you!"

"But 'glory' doesn't mean a nice knock-down argument'," Alice objected.

"When I use a word, " Humpty Dumpty said, in a rather sorrowful tone, "it means just what I choose it to mean — neither more nor less."

"The question is," said Alice, "whether you can make words mean so many different things."

"The question is, "said Humpty Dumpty, "which is to be the master — that's all."

Be that as it may, a word in your ear before the words stop. Can you ever have nice knock-down argument?

96. According to the passage
   a. Anything delightful is paradoxical.
   b. Anything self-referential is paradoxical.
   c. Anything in shades of grey is paradoxical
   d. Anything in a rich and fertile ground is paradoxical

97. From the passage it can be inferred that:
   a. To understand a system, we should investigate within its boundaries.
   b. To understand a system, we should investigate beyond its boundaries.
   c. To understand a system, we should be rigorous and empirical.
   d. To understand a system, we should investigate both within .and beyond its boundaries.

98. According to Humpty Dumpty:
   a. Alice does not know what 'glory' means.
   b. He is Alice's master.
   c. He imparts to a word the meaning he intends.
   d. His words are ambiguous.

99. According to the passage:
   a. When some people say 'bad', they mean the opposite.
   b. God will complete the removal of all atoms from the hydrogen molecule in a million years.
   c. One can simultaneously measure both the velocity and position of sub-atomic particles.
   d. Planck called words 'quanta'

PASSAGE 2

It is well known that industry is an important contributor to the development process of any country. Much of the developments are based on the use of increasing amount of raw materials, energy, chemicals and synthetics. The scale and complexity of requirements for these resources have increased greatly with the rising levels of population and production.

Following India's entry into the global market and the ever-increasing competition in the market, it has become necessary that apart from reduced manufacturing cost, industry must improve its profitability to survive and remain competitive in the international market. To a large extent the product cost in an industry is dependent on its diverted resources towards "End-of-Pipe" pollution control, where pollution created by the industry is treated after the waste has been generated. This approach first allows wasteful use of resources in manufacturing and then consumes further resources to resolve the environmental problems.

The experience over the last two decades has indicated that this approach is only a short term remedy and cannot lead to sustainable industrial developmental, particularly in developing countries. The additional financial burden brought about by the cost of pollution control and end-of-pipe treatment has dissuaded the industry from voluntary adopting pollution control approach. It is now being realised that it is better to adopt the preventive approach i.e. reduce the generation of pollution itself as against the curative approach of taking care after it has been created. It is therefore, important to adopt a strategy of pollution prevention based on technologies that conserve resources, minimize pollution and reuse wastes as secondary resources to the extent possible.

Cleaner Technologies (CT) are the practical application of knowledge, methods and means within the need of man, to provide the most rational use of natural resource and energy and in turn to protect the environment. Such technologies are based on improved manufacturing methods that require less raw

materials and energy to obtain equitable levels of output of identical or better quality. Cleaner technologies also make greater, if not full, use of wastes and recyclable materials and are dependent upon innovation and high level of cooperation between different industries, particularly when exchanges of certain wastes are involved.

For this approach, different agencies prefer to use different terms. For example, UNEP uses the term "Cleaner Production", USEPA uses "Pollution Prevention" and UNIDO prefers to use "Waste Minimization". Some other names under which the concept is being advocated are "Low and non-waste Technologies", "Environmentally Sound Technologies", "Waste Recycling", "Residue Utilization" and "Resource Recovery Technologies".

There are three broad approaches in cleaner technologies of industrial production. (a) Waste minimization technologies involving raw material substitution, process changes, improved house-keeping, equipment redesign and product reformulation. (b) End-of-pipe treatment technologies involving recovery of raw materials, water, energy and useful byproducts. (c) Waste utilization technologies involving reclamation and utilization of wastes as secondary raw materials in other industrial units.

One good example that provides a cleaner technology scenario can be found in the agro-based sugar industry. The waste by products, such as sugarcane bagasse and molasses, form the key raw material for the pulp and paper and distillery industry, respectively. The press mud generated during the purification of juice which was a waste few years ago is now viewed as a rich source of clean energy. Not only this, press mud has proved to be a good organic manure for sugarcane crop. The reuse of hot condensate in juice extraction in the crusher units and as a boiler feed water, not only conserves the fresh water resources but also minimize the quantum of effluent discharge by the industry.

The use of surplus bagasse in the boiler house helps in conserving the energy resources and at the same time potash rich boiler ash is produced which is a good fertilizer for the sugarcane crop. According to an estimate by the Central Pollution Control Board (CPCB) approximately 15,000 to 2,000 litres of water is used per tonne of cane crushed. The recycling and reuse of hot condensate water can reduce this water consumption to as low as 100 to 200 litres. Proper house keeping, periodic checking and maintenance of pipe joints, valves and glands can further reduce this water consumption. Ideally, the industry can be brought down to zero effluent discharging unit.

Bio-methanation of spentwash in distillery industry, chrome recovery in tanneries, caustic recovery in large pulp and paper mills and fibre recovery in small pulp and paper industry are the few other options provided by cleaner technologies. Adoption of such technologies in these sectors would certainly reduce the burden on environment.

The major constraint to promotion of cleaner technologies is lack of information regarding needs of the industry, local conditions, raw materials, and technologies available in developed countries. There is certain perceived risk that discourages entrepreneurs from adopting the relatively new concept of cleaner technologies. A combination of informational, financial, economic and legal measures, therefore, needs to be devised to promote waste minimization through cleaner technologies. There is also lack of coordination and direction in R & D efforts and inadequate thrust for technology transfer from laboratories to commercial scale. These problems arise mainly due to insufficient mission oriented approach of laboratories; inadequacy of design, pilot-scale demonstration of laboratory results; and low value placed on technology transfer by scientific and technological personnel engaged in R & D work.

To overcome these constraints, CPCB sponsored a project at NEERI, Nagpur to develop a database on cleaner technologies through analysis of information available nationally and internationally. This involved studying published literature, accessing established databases and interaction with the R & D centres within industries associations and eminent experts in the field and also technical wings of financial institutions. Information on 509 case studies have been collected for 14 industrial sectors. Regarding any information on cleaner technologies CPCB and NEERI can be approached by industries, consultants and other related organisations.

In order to disseminate information on cleaner technologies among the variety of industries, CPCB has planned industry wise seminars and workshops. The experiences from demonstration plants and feedback from the industries would be discussed in such seminars.

Investment in environmental technology gives ample opportunities to promote cleaner alternatives. With the appropriate measures adopted, one can not only increase profitability, but also minimize pollution generation. It is therefore, the need of the hour, to look into the positive aspects that cleaner technology, has provided to the industry and environment. This will certainly result into a healthy economy and cleaner environment.

100. What is the best meaning of "End of the Pipe" pollution control?

a. avoiding generation of pollution in industrial pipes

b. treatment of pollution waste after it has been generated by industry

c. reducing the generation of pollutants in industries

d. treatment of pollution by end of pipe technology

101. For pollution prevention we must adopt a method based on technologies that:
   a. conserves resources
   b. minimises pollution
   c. reuses wastes as secondary resources to the extent possible
   d. all of these

102. What does the preventive, approach of controlling pollution imply?
   a. Reduce the generation of pollution itself
   b. Treat the waste after it has been produced
   c. Reuse the waste produced
   d. none of these

103. Pollution control using cleaner technologies mainly involves which of the following approaches?
   a. Waster utilisation technologies
   b. Waste minimisation technologies
   c. End of pipe treatment technologies
   d. all of these

104. Which of the following processes shows that agro based sugar industry is a good example of cleaner technology?
   a. The use of bagasse in boiler house
   b. bio-methanisation of spentwash
   c. caustic recovery
   d. all of these

PASSAGE 3

For many Europeans, India evoked a picture of Maharajas, snake charmers, and the rope-trick. This has lent both allure and romanticism to things which are Indian. But in the last couple of decades, with the increasing reference to India as an economically under-developed country, the image of India as a vital, pulsating land has begun to emerge from the fog of Maharajas, snake-charmers, and the rope-trick. The Maharajas are now fast disappearing and the rope-trick was at best a hallucination. Only the snake-charmer remains: generally an ill-fed man who risks his life to catch a. snake, remove its poisonous fangs, and make it sway to the movement of the gourd pipe and all this in the hope of the occasional coin to feed him, his family, and the snake.

In the imagination of Europe, India had always been the fabulous land of untold wealth and mystical happenings, with more than just a normal share of wise men. From the gold digging ants to the philosophers who lived naked in the forests, these were all part of the picture which the ancient Greeks had of the Indians and this image persisted throughout many centuries. It might be more charitable not to destroy it, but to preserve it would mean to perpetuation of a myth.

Wealth in India, as in every other ancient culture, was limited to the few. Mystical activities were also the preoccupation of but a handful of people. It is true, however, that acceptance of such activities was characteristic of the majority. Whereas in some other cultures the rope-trick would have been ascribed to the prompting of the devil and all reference to it suppressed, in India it was regarded with amused benevolence. The fundamental sanity of Indian civilisation has been due to an absence of Satan.

The association of India with wealth, magic, and wisdom remained current for many centuries. But this attitude began to change in the nineteenth century when Europe entered the modern age, and the lack of enthusiasm for Indian culture in certain circles became almost proportionate to the earlier over- enthusiasm. It was now discovered that India had none of the qualities which the new Europe admired. There was apparently no stress on the values of rational thought and individualism. India's culture was a stagnant culture and was regarded with supreme disdain, an attitude perhaps best typified in Macaulay's contempt for things Indian. The political institutions of India, visualised largely as the rule of the Maharajas and Sultans, were dismissed as despotic and totally unrepresentative of public opinion. And this, in an age of democratic revolutions, was about the worst of sins.

Yet, a contrary opinion emerged from amongst a small section of European scholars who had discovered India largely through its ancient philosophy and its literature in Sanskrit. This attitude deliberately stressed the non-modern, non- utilitarian aspects of Indian culture, where the existence of a continuity of religion of over three thousand years was acclaimed; and where it was believed that the Indian pattern of life was so concerned with metaphysics and the subtleties of religious belief that there was no time for the mundane things of life. German romanticism was the most vehement in its support of this image of India: a vehemence which was to do as much damage to India as Macaulay's refection of Indian culture. India became the mystic land of many Europeans, where even the most ordinary actions were imbued with symbolism. India was the genesis of the spiritual East, and also, incidentally, the refuge of European intellectuals seeking escape from their own pattern of life. A dichotomy in values was maintained, Indian values being described as 'spiritual' and European values as 'materialistic', with little attempt at placing these supposedly spiritual values in the context of Indian society (which might have led to some rather disturbing results). This theme was taken up by a section of Indian thinkers during the last hundred years and became a consolation to the Indian intelligentsia for its inability to compete with the technical superiority of Britain.

The discovery of the Indian past, and its revelation to Europe in the eighteenth century, was largely the work of Jesuits in India and of Europeans

of
employed by the East India Company, such as Sir William Jones and Charles Wilkins. Soon the numbers of those interested in studying the classical languages and literatures of India grew, and the early nineteenth century saw considerable achievements in linguistics, ethnography, and other fields of Indology. Scholars in Europe expressed a keen interest in this new field, as is evident from the number of persons who took to Indology and of none of whom at least mention must be made

— F. Max Mueller.

105. According to the passage, the distinguishing trait which made the Indian civilisation sane, was:
   a. the healthy attitudes which its people exhibited.
   b. its preoccupation with the esoteric.
   c. its indifference to magic.
   d. the absence of Satan.

106. What are grounds on which thinkers such as Macaulay regarded the Indian culture with supreme disdain?
   a. the stagnant quality of its culture.
   b. lack of stress of rational thought and individualism.
   c. its unrepresentative and despotic administrative systems
   d. all of the above.

107. What are the sources through which some of modern scholars rediscovered the glory of India?
   a. archaeological evidence.
   b. its scientific discoveries of the past.
   c. its ancient philosophy and Sanskrit literature.
   d. interaction with learned scholars.

108. Who, according to the passage, were the Westerners who glorified Indian culture?
   a. people who professed utilitarian values.
   b. people who sought refuge from the inadequacies of their cultures.
   c. people who studied Indology out of academic interest.
   d. people who were victims of psychological stress

109. What vas the theme which the Indian intelligentsia stuck to as an act of self preservation against the western onslaught?
   a. its ancient discoveries, in science corresponded with modern scientific discoveries.
   b. it was ethically and morally superior to western ethics and morals.
   c. the emphasis on spirituality by Indians as against emphasis on materialism by Westerns.
   d. its superiority in art and architecture.

PASSAGE 3

If western civilisation is in a state of permanent crisis, it is not far fetched to suggest that there may be something wrong with its education. No civilisation, I am sure, has ever devoted more energy and resources to organised education, and if we believe in nothing else, we certainly believe that education is, or should he, the key to everything In fact, the belief in education is so strong that we treat it as the residual legatee of all our problems. If the nuclear age brings new danger; if the advance of genetic engineering opens the doors to new abuses; if commercialism brings new temptations; the answer must be more and better education. The modern way of life is becoming ever more complex: this means that everybody must become more highly educated. ‘By 1984’, it was said recently, ‘it will be desirable that the most ordinary of men is not embarrassed by the use of a logarithm table, the elementary concepts of the calculus, and by the definitions and uses of such words as electron, coulomb, and volt. He should further have become able not only to handle a pen, pencil, and ruler but also a magnetic tape, valve, and transistor. The improvement of communications between individuals and groups depends on it.’ Most of all, it appears, the international situation calls for prodigious educational efforts. The classical statement on this point was delivered by Sir Charles Snow in his ‘Rede Lecture’ some years ago: To say that we must educate ourselves or perish, is a little more melodramatic than the facts warrant. To say we have to educate ourselves or watch a steep decline in our lifetime, is about right, According to Lord Snow, the Russians are apparently doing much better than anyone else and will ‘have a clear edge’, ‘unless and until the Americans and we educate ourselves both sensibly and imaginatively’.

Lord Snow it will he recalled, talked about ‘The Two Cultures and the Scientific Revolution’ and expressed his concern that ‘the intellectual life of the whole of western society is increasingly being split into two polar groups ..... at one pole we have the literary intellectuals ….. at the other, the Scientists.’ He deplores the ‘gulf of mutual incomprehension’ between these two groups and wants it bridged. It is quite clear how he thinks this bridging’ operation is to be done: the aims of his educational policy would be. first, to get as many ‘alpha-plus scientists as the country can throw up’; second, to train ‘a much larger stratum of alpha professionals’ to do the supporting research, high class design and development; third, to train ‘thousands upon thousands’ of other scientists and engineers; and finally, to train ‘politicians, administrators and the entire community, who know

enough science to have a sense of what the scientists are talking about'. If this fourth and last group can at least be educated enough to 'have sense' of what the real people. the scientists and engineers, are talking about, so Lord Snow seems to suggest, the gulf of mutual incomprehension between the 'Two Cultures' may be bridged.

These ideas on education, which are by no means unrepresentative of our times, leave one within the uncomfortable feeling that ordinary people, including politicians, administrators, and so forth, are really not much use; they have failed to make the grade: but, at least, they should be educated enough to have a sense of what is going on, and to know what the scientists mean when they talk, to quote Lord Snow's example about the Second Law of Thermodynamics. It is an uncomfortable feeling, because the scientists never tire of telling us that the fruits of their labours are 'neutral': whether they enrich humanity or destroy it depends on how they are used. And who is to decide how they are used? There is nothing in the training of scientists and engineers to enable them to take such decisions, or else, what becomes of the neutrality of science?

If so much reliance is today being placed in the power of education to enable ordinary people to cope with the problems thrown up by scientific and technological progress, then there must be something more to education than Lord Snow suggests. Science and engineering produce 'know-how'; is one more a culture than a piano is music, can education help us to finish the sentence, to turn the potentiality into a reality to the benefit of man?

To do so, the task of education would be, first and foremost, the transmission of ideas of value of what to do with our lives. There is no doubt also the need to transmit know-how but this must take second place, for it is obviously somewhat foolhardy to put great powers into the hands of people without making sure that they have a reasonable idea of what to do with them. At present, there can be little doubt that the whole of mankind is in mortal danger, not because we are short of scientific and technological know-how, but because we tend to use it destructively, without wisdom. More education can help us only if it produces more wisdom.

The essence of education, I suggest, is the transmission of values, but values do not help us to pick our way through life unless they have become our own, a part, so to say, of our mental make-up. This means that they are more than mere formulae or dogmatic assertions: that we think and feel with them, that they are the very instruments through which we like at interpret, and experience the world. When we think, we do not just think: we think with ideas. Our mind is not a blank, a tabula rasa. When we begin to think we can do so only because our mind is already filled with all sorts of ideas with which to think. All through our youth and adolescence, before the conscious and critical mind begins to act as a sort of censor and guardian at the threshold, ideas seep into our mind, vast hosts and multitudes of them. These years are, one might say, our Dark Ages during which we are nothing but inheritors; it is only in later years that we can gradually learn to sort out our inheritance.

First of all, there is language. Each word is an idea. If the language which seeps into us during our Dark Ages is English, our mind is thereby furnished by a set of ideas which is significantly different from the set represented by Chinese, Russian, German, or even American. Next to word, there are the rules of putting them together: grammar, another bundle of ideas, the study of which has fascinated some modern philosophers to such an extent that they thought they could reduce the whole of philosophy to a study of grammar.

All philosophers and others have always paid a great deal of attention to ideas seen as the result of thought and observation; but in modern times all too little attention has been paid to the study of the ideas which form the very instruments by which thought and observation proceed. On the basis of experience and conscious thought, small ideas may easily be dislodged, but when it comes to bigger, more universal, or more subtle ideas it may not be so easy to change them. Indeed, it is often difficult to become aware of them, as they are the instruments and not the results of our thinking, just as you can see what is outside you, but cannot easily see that with which you see, the eye itself. And even when one has become aware, it is often impossible to judge them on the basis on ordinary experience.

We often notice the existence of more or less fixed ideas in other people's minds — ideas with which they think without being aware of doing so. We then call them prejudices, which is logically quite correct because they have merely seeped into the mind and are in no way the result of Judgement. But the word prejudice is generally applied to ideas that are patently erroneous.

Recognisable as such by anyone except the prejudiced man, most of the ideas with which we think are not of that kind at all. To some of them, like those incorporated in words and grammar, the notions of truth or error cannot even be applied, others are quite definitely not prejudices but the result of a Judgement; others again are tacit assumptions or presuppositions which may be very difficult to recognise.

I say, therefore, that we think with or through ideas and that what we call thinking is generally the application of preexisting ideas to a given situation or set of facts. When we think about, say the political situation, we apply to that situation our political ideas, more or less systematically, and attempt to make the situation 'intelligible' to ourselves by means of these ideas. Similarly everywhere else. Some of the ideas are

ideas of value, that is to say, we evaluate the situation in the light of our value-ideas.

The way in which we experience and interpret the world obviously depends very much indeed on kind of ideas that fill our minds. If they are mainly small, weak, superficial, and incoherent, life will appear insipid, uninteresting, petty and chaotic. It is difficult to bear the resultant feeling of emptiness, and the vacuum of our minds may only too easily be filled by some big, fantastic notion — political or otherwise — which suddenly seem to illumine everything and to give meaning and purpose to our existence. It needs no emphasis that herein lies one of tile great danger of our time.

When people ask for education they normally mean something more than mere training, something more than mere knowledge of facts, and something more than a mere diversion. May be they cannot themselves formulate precisely what they are looking for; but I think what they are really looking for is ideas that could make the world, and their own lives, intelligible to them. When a thing is intelligible you have a sense of participation; when a thing is unintelligible you have a sense of estrangement. 'Well, I don't know,' you hear people say, as an impotent protest against the unintelligibility of the world as they meet it. If the mind cannot bring to the world a set — or, shall we say, a tool-box— of powerful ideas, the world must appear to it as a chaos, a mass of unrelated phenomena, of meaningless events. Such a man is like a person in a strange land without any meaning to him; nothing can hold his vital interest; he has no means of making anything intelligible to himself.

110. The writer seems to criticise the belief that:
   a. education gives rise to further complexities as the civilisation progresses.
   b. all new problems and complexities can be tackled and solved by more and better education.
   c. people need to learn more in order to earn more.
   d. none of the above.

111. What, according to the author, would be the definition of 'prejudice'?
   a. ideas that help people to identify with new situations.
   b. fixed ideas with which people think without being aware of doing so.
   c. ideas that people cull from experience in order to judge a situation.
   d. fixed ideas that see a person through the trials and tribulations of life.

112. According to Lord Snow, which of the following groups needs to be educated enough to at least understand the works of scientists and engineers?
   a. politicians, administrators, and the entire community.,
   b. politicians and the literary intellectuals.
   c. politicians and the layman.
   d. all of the above.

113. In the passage, the writer questions:
   a. the neutrality of science.
   b. scientists' stand on the neutrality of science.
   c. scientists' stand on the neutrality of their labours.
   d. Lord Snow's assertion regarding the potential of intellectuals in society.

114. The author's assertion in the passage is that the main responsibility of education is to:
   a. transmit ideas of value.
   b. transmit technical knowledge.
   c. both a and b
   d. transmit values regarding human and societal norms.

115. The author believes that:
   a. the gulf between science and literature needs to be bridged.
   b. the gulf between science and literature should be maintained for a holistic view of society and its problems.
   c. the gulf between science and literature is created by society.
   d. none of the above.

116. Which of the following sentences is not true according to the author?
   a. values must be part of one's psyche.
   b. values are merely dogmatic assertions.
   c. one identifies with values.
   d. values are the means to interpret and experience the word.

117. Thinking is
   a. being
   b. knowing
   c. application of pre-existing ideas to a situation.
   d. application of fixed ideas to a situation.

PASSAGE 4

We have moved from the old organised model to today's unorganised one. In the orderly, stable organised world, there was certainty and convention. In the global unorganised world, there is freedom, diversity and instability. While these changes have occurred in the wider world, managers and employees have not changed their attitude and behavior sufficiently to adapt their traditional business organisations to the new circumstances. As a result, much of the activity that takes place in our

organisations is mere busyness and not business. In other words, it is bureaucracy, administration and other non- value adding work.

Today typical business organisations hove formal membership and highly structured policies and procedures, with work carried out in specified locations such as offices. These organised business organisations suffer from some fundamental flaws that cause the high levels of bureaucracy and busyness. The fundamental flaws are: Increasingly Bounded Rationality, Lack of Incentive, Existence of Force.

Bounded rationality is the problem of limited understanding and control of an increasingly dynamic and global unorganised world. Managers cannot locate and organise responses to opportunities and threats around the globe. They must respond by devolving decision-making responsibility, letting strategies emerge and making reversible commitments. If they do not, their inability to realize the organisation's full potential will cause discontent amongst employees, customers and shareholders.

Accurate incentives within free markets stimulate the optimal completion of valuable business outcomes, paramount amongst which is excellent customer service. However, bounded rationality causes a lack of accurate and adequate incentives within traditional static companies. These faulty incentives mean that achieving' world class performance is reliant upon the existence of intrinsic employee motivations such as pride and satisfaction felt at delighting a customer. Faulty incentives also necessitate the very existence of managers and managerial procedures. If everyone in the company was doing what they wanted to, there would be no need for other people higher in rank to supervise and ensure adequate completions of the tasks.

Dependence within organised organisations means that to perform excellently, individuals have to rely on their colleagues supporting them. Organised groupings such as teams splinter and divide because different members think and believe different things about the decisions going on within that group. Effort is either expended on busy negotiations and compromise to keep the group together, or the static group disintegrates. Either way, the organised groupings do not provide an optimal platform for internal employee collaboration or external customer responsiveness.

The existence of coercion and force within organised business organisations means that people are forced to do things. They have no choice but to carry out the tasks given to them by their managers, which they are often not interested in or suited to, or which do not challenge their full abilities. This means that employee potential is not maximised and external customer results are sub-optimal.

To overcome these fundamental flaws and ensure that the company's actual growth is close to its sustainable potential, managers should implement unorganisation techniques such as down-structuring, opportunitizing and collapsible corporation. This then aligns their companies more closely to the unorganised. operating environment and thereby increases the amount of business and reduces the amount of busyness carried out in organisational contexts.

Down-structuring (removing structure) is not about reducing the number of employees (down sizing) or changing structure (restructuring). Down-structuring is removing the "hard" side of the organisation: its policies, procedures, strategies systems and structures such as job titles and paper-based administration. Down-structuring is the technique of choice for transforming those areas of organisation involved in idea creation and knowledge working. Because idea creation is not related to time or place, down-structuring is a useful tool that facilitates location independent working. Currently in India, many workers travel to their company offices to work because they do not have the necessary resources at home. But as mobile and fixed telecommunications services and Internet provision are deregulated, such services will fall in price and become widely available to more people.

Whereas down-structuring is the practice of eliminating structure, opportunitizing is the practice of making structures in the organisation dynamic. Opportunitizing is best suited to freeing employees engaged in physical activities such as farming, distribution, manufacturing and assembly. Within such industries, employees should be able to take responsibility for important personal and company objectives such as product quality, customer service, reliable production, continuous improvement and learning. Opportunitizing reduces structure sufficiently to allow employees to meet these valuable and objectives by minimising the means that hinder their achievement. Too many procedures were set up merely with the intention of arbitrary control of "subordinates".

Under opportunitizing, those structures that are static and an end in themselves (a means for managerial control) are removed, On the other hand, those structures that are dynamic and flexible and a means to an end (employee learning, product quality) are kept. The remaining positive procedures are opportunitized, such that they are followed during routine customer services requests. Down-structured companies and new start-ups will be collapsible dynamically and impermanently in order to meet customer requirements.

The people who participate in collapsible corporations will have transformed themselves from dependent "rankers"; interchangeable units of economic production, to independent "branders": people who think of themselves as brands, with a strong inner care of knowledge and outer care of image

and networking. Collapsible corporations are shaped around electronic signals rather than physical geographical office buildings.

Business success for collapsible corporations is all about combining the complementary capabilities of business partners for mutual gain. Once a novel idea or content has been generated, it can be implemented by outsourcing the actual production and distribution. Enabling technologies such as the Internet facilitate this partnering. Such low-entry barrier media provide entrepreneurs with a mechanism to create wealth. Like unorganisation, core competence advocates specialisation and outsourcing of all activities that are not directly related to the core competence.

118. It can be said that dependence contributes to busyness most likely through:
   a. wastage of energy and effort in keeping groups together through negotiations and compromises.
   b. wastage of time in getting people to do the job.
   c. wastage of effort in trying to group people and educate them.
   d. None of the above.

119. Which of the following can be least true of the characteristic of "Down-Structuring"?
   a. Reduction in employee numbers in order to cut down the cost.
   b. Changing structure in order to satisfy the customer.
   c. Realigning organizational adjectives in order
   d. maximize the profit.
   e. All of the above except (b).

120. Which of the following is most likely to be true with regard to collapsible organisations?
   a. People are "branders".
   b. People. would be outsourced by the organization.
   c. Antiquated methods of staffing would lose relevance.
   d. All of the above.

121. Which of the following does not contribute to unwanted bureaucracy and busyness?
   a. Bounded rationality not leading to decision making responsibility and commitments.
   b. Lack of incentives leading to excessive need for support.
   c. Dependence leading to excessive need for support.
   d. Absence of force leading to non-maximization of potential.

122. As per the passage, 'Bounded Rationality' may be defined as:
   a. limited understanding of a dynamic and changing world.
   b. irrationality in the wake of problems and the inability to cope with it.
   c. inability to comprehend simple things and the tendency to be complex in outlook.
   d. None of the above.

PASSAGE 5

Over the last 20 years, the Bretton Woods institutions have disbursed loans for 'stablisation" and "structural adjustment" to more than 70 development countries. These loans carry conditions that cover a wide range of domestic policies and institutions in borrower countries. The implementation of orthodox stablisation and structural adjustment of programmes has been disastrous for the working people and the poor at the countries in which these programmes were imposed.

In the first 20 years of the IMF, over one-half of its resources were used by industrial countries. Over time, industrial countries stopped borrowing from the IMF, and it became a source of credit almost exclusively for developing countries. This process accelerated after the start of the debt crisis in 1982. There is now a clear division between borrowing and non-borrowing members of the Fund, a shift associated with a gradual phasing out of low conditionally loans. By 1981, financial assistance from the IMF was, in the words of an IMF publication, "conditioned on the adoption of adjustment lending". The new types of loans and the new environment of lending associated new conditions. IMF conditionalitics now pertain not just to balance-of-payments or exchange rate and price policies, but to a large number of structural features of an economy. Conditionality has become more wide-ranging and more stringent now.

A similar development occurred with respect to lending by the World Bank. Until the mid-1970s, the World Bank lent money primarily to finance development projects. The conditions imposed on the borrower related to performance in respect of specific projects. From the 1970s, however, the World Bank began non-project financing. In the early 1980s, the World Bank introduced Structural Adjustment Loans (SALS) and Sectorial Adjustment Loans (SECALs) lending has increased steadily.

This shift in the nature of lending was associated with a broadening of the conditions imposed on the borrower. The conditions attached to structural adjustment loans are economy-wide and include those on trade policy, public finance, the ownership and management of public sector enterprises and agricultural and industrial policy.

With the debt crises of the 1980s, and with both the IMF and the World Bank lending for

stabilisation and structural adjustment, "cross conditionality" came into force. The World Bank, for example, may not agree to a SAL unless the borrower-country has accepted the terms of a standby agreement with the IMF. Together, the two Bretton Woods institutions are able to impose a host of conditions on the economies of developing countries. In what would have seemed a role- reversal in earlier years, the IMF can now impose conditions on specific sectors rather than on macroeconomic variables and the World Bank can impose conditions on macro- management rather than only on specific sectors and it is now difficult to distinguish between the conditionalities of the two institutions.

The need to study the effects of orthodox stabilisation and structural adjustment programmes comes from the fact that they have been implemented in large parts of developing world. The typical elements of an orthodox stabilisation and structural adjustment programme are first, fiscal austerity, monetary contraction and devaluation, and second, a set of policies at the sectoral and micro level. The second set of conditions focus on "reform" of "policies and institutions" and include privatising public sector enterprises, deregulating financial markets and agricultural prices, the labour market and removing trade barriers.

Orthodox stablisation and structural adjustment programmes have been criticised, in India and elsewhere, on the three major grounds. The first is that they undermine the sovereignty of borrower nations. The second is that orthodox programmes have failed to stimulate social production and economic growth. The third is that these policies impose a severe burden on the poor.

123. Initially the role of the World Bank was to
   a. concentrate on non project financing.
   b. dictating conditions which affected structural of economics.
   c. finance developmental projects.
   d. finance development projects and performance appraisal of those projects with respect to condition imposed.

124. The grounds on which orthodox stablisation and structural adjustment programmes were criticised is
   a. they undermine the sovereignty of borrower nations.
   b. they did not stimulate social production and economic growth.
   c. they impose a severe burden on the poor.
   d. all of the above.

125. What is the best meaning of "cross conditionality" according to the passage?
   a. Interlinking of terms of World Bank with IMF.
   b. Interlinking of economic policies of borrower countries and IMF.
   c. Interlinking of economic policies of developed and developing countries.
   d. Interlinking of economic policies of most countries and World Bank.

126. According to the passage
   a. Borrowing of loans is the exclusive privilege of industrialised countries.
   b. Borrowing of loans is limited only to underdeveloped countries.
   c. Initially Industrialised Nations used the resources of Bretton Wood twins but the current trend is the borrowing of loans by developing countries.
   d. All of the above.

127. The trends in the IMF conditionalities:
   a. now point towards emphasis on balance of payments.
   b. now point towards emphasis on exchange rates.
   c. are tending towards affecting price policies of borrowers.
   d. now affect a large number of structural features of the economies of borrowing countries.

PASSAGE IV

From ancient times, men have believed that, under certain peculiar circumstances, life could arise spontaneously: from the ooze of rivers could come eels and from the entrails of dead bulls, bees; worms from mud, and maggots from dead meat. This belief was held by Aristotle, Newton and Descartes, among many others, and apparently the great William Harvey too. The weight of centuries gradually disintegrated men's beliefs in the spontaneous origin of maggots and mice, but the doctrine of spontaneous generation clung tenaciously to the question of bacterial origin.

In association with Buffon, the Irish Jesuit priest, John Needham declared that he could bring about at will the creation of living microbes in heat-sterilized broths, and presumably, in propitiation, theorized that God did not create living things directly but bade the earth and water to bring them forth. In his Dictioinaire Philosophique, Voltaire reflected that it was odd to read of Father Needham's claim while atheists conversely 'should deny a Creator yet attribute to themselves the power of creating eels' But, wrote Thomas Huxley, 'The great tragedy of science — the slaying of a beautiful hypothesis by an ugly fact which is so constantly being enacted under the eyes of philosophers was played, almost immediately, for the benefits of Buffon and Needham.

The Italian Abbe Spallanzani did an experiment. He showed that a broth sealed from the air

while boiling never develops bacterial growths and hence never decomposes. To Needham's objection that Spallenzani had ruined his broths and the air above them by excessive boiling, the Abbe replied by breaking the seals of his flasks. Air rushed in and bacterial growth began! But the essential conflict remained. Whatever Spallanzani and his followers did to remove seeds and contaminants was regarded by the spontaneous generationists as damaging to the 'vital force' from whence comes new life.

Thus, doubt remained, and into the controversy came the Titanic figure of Louis Pasteur. Believing that a solution to this problem was essential to the development of his theories concerning the role of bacteria in nature, Pasteur freely acknowledged the possibility that living bacteria very well might be arising anew from inanimate matter. To him, the research problem was largely a technical one: to repeat the work of those who claimed to have observed spontaneous generation but to employ infinite care to discover and exclude every possible concealed portal of bacterial entry. For the one that contended that life did not enter from the outside, the proof had to go to the question of possible contamination. Pasteur worked logically. After prolonged boiling, a broth would ferment only when air was admitted to it. Therefore, either air contained a factor necessary for the spontaneous generation of life or viable germs were borne by the air and seeded in the sterile nutrient broth. Pasteur designed ingenious flasks whose long S-shaped necks could be left open. Air was trapped in the sinuous glass tube. Broths boiled in these glass tubes remained sterile. When their necks were snapped to admit ordinary air, bacterial growth would then commence but not in every case. An occasional flask would remain sterile presumably because the bacterial population of the air is unevenly distributed. The forces of spontaneous generation would not be so erratic. Continuous scepticism drove Pasteur almost to fanatical efforts to control the ingredients of his experiments to destroy the doubts of the most sceptical. He ranged from the mountain air of Montanvert, which he showed to be almost sterile to those deep, clear wells whose waters had been rendered germ free by slow filtration through sandy soil. The latter discovery led to the familiar porcelain filters of the bacteriology laboratory. With pores small enough to exclude bacteria, solutions allowed to percolate through them could be reliably sterlised.

The argument raged on and soon spilled beyond the boundaries of science to become a burning religious and philosophical question of the day. For many, Pasteur's conclusions caused conflict because they seemed simultaneously to support the Biblical account of creation while denying a variety of other philosophical systems. The public was soon caught up in the crossfire of a vigorous series of public lectures and demonstrations by leading exponents of both views, novelists, clergymen, their adjuncts and friends. Perhaps the most famous of these evenings in the theatre competing perhaps with a great debate between Huxley and Bishop Wiberforce for elegance of rhetoric was Pasteur's public lecture at the Sorbonne on 7 April, 1864. Having shown his audience the swan necked flasks containing sterile broths, he concluded, "And, therefore, gentlemen, I could point to that liquid and say to you, I have taken my drop of water from the immensity of creation, and I have taken it full of the elements appropriated to the development of inferior beings. And I wait, I watch, I question it! — begging it to recommence for me the beautiful spectacle of the first creation. But it is dumb since these experiments were begun several years ago; it is dumb because I have kept it from the only thing man does not know how to produce: from the germs that float in the air, from Life, for Life is a germ and a germ is Life. Never will the doctrine of spontaneous generation recover from the mortal blow of this simple experiment." And it has not, Today these same flasks stand immutable: they are still free of microbial life.

It is an interesting fact that despite the ringing declaration of Pasteur, the issue did not die completely. And although far from healthy, it is not yet dead. In his fascinating biography of Pasteur, Rene Dubos has traced the later developments which saw new eruptions of the controversy, new technical progress and criticism, and new energetic figures in the breach of the battle such as Bastion, and the immortal Tyndall, against the doctrine of spontaneous generation. There was also new 'sorrow' for Pasteur as he read years later, in 1877, the last jottings of the great psychologist Claude Bernard and saw in them the 'mystical' suggestion that yeast may arise from grape juice. Even at this late date, Pasteurwas stirred to new experiments again to prove to the dead Bernard and his followers the correctness of his position.

It seems to me that spontaneous generation is not only a possibility, but a completely reasonable possibility which should never be relinquished from scientific thought. Before men knew of bacteria, they accepted the doctrine of spontaneous generation as the 'only reasonable alternative' to a belief in supernatural creation. But today, as we look with satisfaction at the downfall of the spontaneous generation hypothesis, we must not forget that science has rationally concluded that life once did originate on earth by spontaneous generation. It was really Pasteur's evidence against spontaneous generation that for the first time brought the whole difficult question of the origin of life before the scientific world. In the above controversy, what was unreasonable was the parade of men who claimed to have 'proved' or who resolutely 'believed in' spontaneous generation on the face of proof— not that spontaneous generation cannot occur — but that their work was shot through with experimental error. The acceptable evidence also makes it clear that spontaneous generation, if it does not occur, must obviously he. highly improbable even under present

conditions. Logic tells us that science can only prove an event improbable: it can never prove it impossible — and Gamow has appropriately remarked that nobody is really certain what would happen if a hermetically sealed can were opened after a couple of million years. Modem science agrees that it was highly improbable for life to have arisen in the pre-Cambrian seas, but it concluded, nevertheless, that there it did occur. With this, I think, Pasteur would agree.

Aside from their theoretical implications, these researchers had the great practical result of putting bacteriology on a solid footing. It was now clear how precisely careful one had to be to avoid bacterial contamination in the laboratory. We now knew what 'sterile' meant and knew that there could be no such thing as 'partial sterlisation'. The discovery of bacteria high in the upper atmosphere, in the mid of the deep see bottom, in the waters of hot springs, and in the Arctic glaciers established bacterial ubiquity as almost absolute. In recognition of this, Lord Lister introduced aseptic technique into the practice of surgery. It was the revolution in technique alone that made possible modern bacteriology and the subsequent research connecting bacteria to phenomena of human concern, research which today is more prodigious than ever. We are just beginning to understand the relationship to bacteria of certain human diseases, to soil chemistry, nutrition, and the phenomenon of antibiosis, wherein a product of one organism (e.g. penicillin) is detrimental to another.

It is not an exaggeration then to say that the emergence of the cell theory represents biology's most significant and fruitful advance. The realisation that all plants and animals are composed of cells which are essentially alike, that cells are all formed by the same fundamental division process, that the total organism is a whole made u of the activities and interrelations of its individual cells, opened up horizons we have not even begun to approach. The cell, is a microcosm of life, for in its origin, nature and continuity, resides the entire problem of biology.

128. Pasteur began his work on the basis of the contention that:
   a. either air contained a factor necessary for the spontaneous generation of life or viable germs were borne in by the air and seeded in the sterile nutrient broth.
   b. after prolonged boiling, a broth would ferment only when air was admitted to it.
   c. both a) and b)
   d. neither a) nor b)

129. The porcelian filters of the bacteriology laboratories owed their descent to:
   a. Pasteur's homeland.
   b. the well water of Montanvert that had been rendered germ free by slow filtration through sandy soil.
   c. both a) and b).
   d. none of the above.

130. What, according to the passage, was Pasteur's declaration to the world?
   a. nobody could deny the work done by him.
   b. science would forever be indebted to his experiments in bacteriology.
   c. the doctrine of spontaneous generation would never recover from the mortal blow dealt to it by his experiments.
   d. those who refused to acknowledge his experiments would regret their scepticism.

131. What according to the writer, was the problem with the proponents of spontaneous generation?
   a. their work had no scientific basis.
   b. their work was ruined by experimental errors.
   c. "Never will the doctrine of spontaneous generation recover from the mortal blow of this simple experiment." And it has not..."

132. One of the results of the theoretical cross fire regarding bacteriology was that:
   a. partial sterilisation as a possibility was ruled out.
   b. aseptic technique was introduced in surgery.
   c. the meaning of sterile was clear to all.
   d. all of the above.

133. One of the reasons for the conflict caused by Pasteur's experiments was that:
   a. they denied the existence of God as the Creator.
   b. they seemed simultaneously to support the Biblical account of creation while denying a variety of other philosophical systems.
   c. academicians and scientists refused to accept his theories.
   d. there were too many debates on the topic and this left the people confused.

134. According to the author:
   a. it is an exaggeration to say that cell theory represents biology's most significant and fruitful advance.
   b. Pasteur could not hold his own against the contenders.
   c. cell theory rendered null and void all the other bacteriological theories of the time.
   d. the emergence of the cell theory represents biology's most significant and fruitful advance.

135. It can be inferred from the passage that
   a. Huxley, Buffon and Needham were contemporaries
   b. Buffon, Needham, Voltaire and Huxley were contemporaries.
   c. Voltaire wrote a treatise on Needham's claim.
   d. none of the above.

136. According to the passage.
   a. Pasteur's precursors in the field worked on the basis of spontaneous generation.
   b. Unlike his predecessors, Pasteur worked on logical premises rather than arbitrary and spontaneous discoveries.
   c. Pasteur stood to benefit largely from the work of his predecessors.
   d. Pasteur developed the ideas set forth by Voltaire and Needham.

137. Needham's theory that 'God did not create living things directly was posited as
   a. an attempt to support his assertion by religious doctrine.
   b. an attempt at placating his religious peers.
   c. an attempt at propitiating a possibly offended God or the religious psyche of the time.
   d. all of the above.

PASSAGE 6

In his book "About Behaviourism", Dr. B.F. Skinner, the noted behavioural psychiatrist, lists the 20 most salient objections to behaviourism and goes on to answer them. He has answers and explanations for every one. For instance, to those who object that behaviourism "neglects innate endowment and argues that all behaviour is acquired during the lifetime of the individual," Dr. Skinner expresses puzzlement. Granted, "a few behaviourists in their enthusiasm for what may be done through the environment, have minimised or even denied genetic contribution. But others have no doubt acted as if a genetic endowment were unimportant. Few would actually contend that behaviour is endlessly malleable." And Dr. Skinner himself, sounding as often as not like some latter-day social Darwinist, gives as much weight to the 'contingencies of survival' in the evolution of the human species as to the 'contingencies of reinforcement' in the lifetime of the individual. Dr Skinner is a radical behaviourist. Radical behaviourism does not deny the possibility of self-observation or self-knowledge.

To those who claim that behaviourism "Cannot explain Creative achievements—in arts, in music, literature, science or mathematics," Dr. Skinner provides an intriguing ellipsis. "Contingencies of reinforcement also resemble contingencies of survival in the production of novelty. In both natural selection and operand conditions, the appearance of mutations is crucial. Until recently, species evolved because of random changes in genes or chromosomes, but the geneticist may arrange conditions under which mutations are particularly likely to occur. We can discover some of the sources of the new forms of behaviour which undergo selection by prevailing contingencies or reinforcement, and fortunately the creative artist or thinker has other ways of introducing novelties."

Dr. Skinner's answers to the 20 questions he poses — questions that range all the way from investigating that behaviourism fails 'to account for cognitive processes' to wondering if behaviourism 'is indifferent to the warmth and richness of human life, and is incompatible with the enjoyment of art, music .and with love for one's fellow men,' But will it wash? Will it serve to serve those critics who have characterised Skinner variously as a mad, manipulative doctor, as a native nineteenth century positivist, as an unscientific technician, an arrogant social engineer? There is no gainsaying that 'About Behaviourism' is an unusually compact summing up of both the history and 'the philosophy of the science of human behaviour' (as Dr. Skinner insists on defining behaviourism). It is a veritable artwork of organisation. And anyone who reads it will never again be able to think of behaviourism as simplistic philosophy that reduces human being to black boxes responding robot-like to external stimuli.

Still, there are certain quandaries that the book does not quite dispel. For one thing though Dr. Skinner makes countless references to the advances in experiments with human beings that behaviourism has made since it first began running rats through mazes six or seven decades go, he fails to provide a single illustration of these advances. And though it may be true, as Dr. Skinner argues that one can extrapolate from pigeons to people, it would be reassuming to be shown precisely how. More important, he has not satisfactorily rebutted the basic criticism that behaviourism "is scientistic rather than scientific; it merely emulates the sciences.' A true science doesn't predict in advance what it will accomplish when it is firmly established as a science, not even when it is posing as 'the philosophy of that science.' A true science simply advances rules for testing hypothesis. But Dr. Skinner predicts that behaviourism will produce the means to save human society from impending disaster. Two key concepts that keep according to that prediction are 'manipulation', and 'control'. And so while he reassures us quite persuasively that science would practise those concepts benignly, one can't shake off the suspicion that he was advancing a science just in order to save society by means of 'manipulation' and 'control', and that is not so reassuring.

138. What would be nearest in meaning of lie sentence: "Dr. Skinner provides an intriguing ellipsis"?
   a. he provides a complicated explanation
   b. he provides a concise explanation
   c. he deviates from the point
   d. he provides a viable explanation

139. The passage is most probably a/an:
   a. essay on behaviourism
   b. hook review
   c. analysis of behaviourism
   d. psychological discourse

140. From the passage it can be inferred that the book mentioned here deals with:
   a. answers to questions about behaviourism
   b. the science of behaviourism
   c. behaviourism and human life
   d. a list of questions and answers on the science of behaviourism.

141. It can be inferred from the passage that Dr. Skinner is a:
   a. behavioural psychologist who explains the values of behaviourism
   b. a radical 'behaviourist' who accepts the possibility of self knowledge
   c. behaviourist who denies existence of sensations and feelings of human life
   d. a scientist who advocates methodological behaviourism.

142. The author advocates the view that:
   a. a behavioural pattern is set up during the lifetime of an individual
   b. there are too many chance occurrences in the lifetime of individual
   c. environmental factors count much in the behaviour of human being
   d. there is an absence of genetic contribution in the science of behaviourism.

143. Which of the following statements is true?
   a. Behaviour takes different pliable forms and patterns
   b. Contingencies of reinforcement play a very important part
   c. Contingencies of survival play an important part as contingencies of reinforcement
   d. 'There are different and novel factors of environment that contributes.

144. Which of the following is true about Radical Behaviourism?
   a. it does not deny the possibility of self-observation and its necessity
   b. it give great importance to retrospection
   c. it counteracts the influence of mentalism
   d. tries to put an end to mentalistic explanation of behaviour.

145. The passage stresses on the importance of which of the following?
   a. the relationship between creativity and human achievement
   b. the part played by mutations in creating novelties
   c. the development of a creative artist by the influence of behaviour
   d. prevailing contingencies or reinforcement selecting new forms of behaviour

SECTION-IV

Directions for Q. 146 to 151: The following table gives the quantity of Apples (in tonnes) arriving in the Agricultural Produce Market Committee (APMC), New Delhi in the year 1990-91. In the months in which demand was more than supply, the additional demand was met by the stock from cold storage.

Month	HP	UP	J&K	Cold	Total
April	7	0	7	59	73
May	12	1	0	0	13
June	9741	257	8017	0	18015
July	71497	10	18750	0	90257
Aug.	77675	0	20286	0	97961
Sep.	53912	0	5660	0	110514
Oct.	12604	0	79591	24	92219
Nov.	3499	0	41872	42	45413
Dec.	1741	0	14822	15	16578
Jan.	315	0	10922	201	11438
Feb.	25	0	11183	77	11285
March	0	0	683	86	760

146. What was the maximum percentage of Apples supplied by any state in any of the months?
   a. 99%
   b. 95%
   c. 88%
   d. 100%

147. Who supplied the maximum Apples?
   a. UP
   b. HP
   c. J&K
   d. Cold Storage

148. Which state supplied the highest percentage of Apples from the total Apples supplied?
   a. HP
   b. UP
   c. J & K
   d. Cannot be determined.

149. In which of the following periods was the supply greater than the demand?

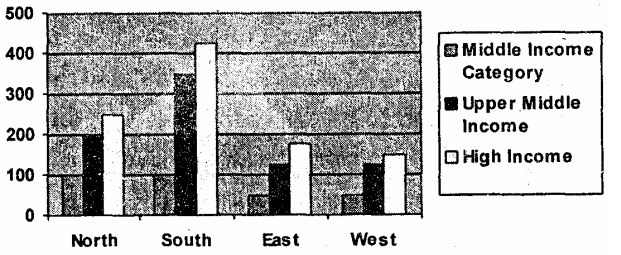
of

a. Aug-Mar
b. June-Oct
c. May-Sep
d. Nov-April

150. If the yield per tree was 40 kg, then from how many trees were the apples supplied to Delhi (in million)?
a. 11.5
b. 12.5
c. 13.5
d. Cannot be determined.

151. Using data in Q.150, if there were 250 trees per hectare then how many hectares of land was used?
a. 9400
b. 49900
c. 50000
d. 49453

Directions for Q. 152 to 155: The following bar chart gives percentage growth in household incomes of the middle, upper middle and high income categories in the four regions for the period between 87-88 to 94-95.



	No. of Households in (87-88) (in thousands)	Avg House-hold Income (87-88)	Growth of Avg. Income (87-88)& (94-95)
Middle Income	40	30000	50%
Upper Middle	10	50000	60%
High Income	5	75000	90%

152. Which region showed the highest growth in all the income categories for the period?
a. North
b. South
c. West
d. None

153. What was the total household income in Northern Region for upper middle class?
a. 50 lakhs
b. 500 million
c. 3000 million
d. Cannot be determined.

154. What is the percentage increase in total household income for the Northern Region (upper middle) over the given period?
a. 100
b. 200
c. 240
d. Cannot be determined

155. What was the average income of the high-income group in 87-88?
a. 75000
b. 25000
c. 225000
d. cannot be determined.

Directions for Q. 156 to 157: If the same data as above can be used, with the additional information that the numbers of households in each category were equally distributed in all the regions then answer Q 156-157.

156. The ratio of total income for the high-income category to the upper middle class increased by how much percentage in the given period?
a. 20
b. 18.7
c. 25
d. cannot be determined.

157. The average income for the northern region in 87-88, was
a. 37727
b. 37277
c. 35000
d. cannot be determined.

Directions for Q. 158 to 162: Use the following information.

Krishna distributed 10 acres of land to Gopal and Ram who paid him the total amount in the ratio 2 : 3. Gopal invested a further Rs. 2 lakh in the land and planted coconut and lemon trees in the ratio 5: 1 on equal area of land. There were a total of 100 lemon trees. The cost of one coconut was Rs. 5. The crop took 7 years to mature and when the crop was reaped in 1997, the total revenue generated was 25% of the total amount put in by Gopal and Ram together. The revenue generated from the coconut and lemon tress was in the ratio 3 : 2 and it was shared equally by Gopal and Ram as the initial amount spent by them were equal.

158. What was the total output of coconuts?
a. 24000
b. 36000
c. 18000
d. 48000

159. What was the value of output per acre of lemon tress planted (in lakh/acre)
   a. 0.24
   b. 2.4
   c. 24
   d. cannot be determined

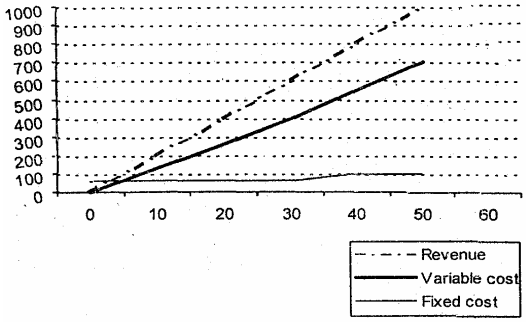
160. What was the amount received by Gopal in 1997?
   a. Rs. 1.5 lakh
   b. Rs. 3.0 lakh
   c. Rs. 6 lakh
   d. None of these

161. What was the value of output per tree for coconuts?
   a. 36
   b. 360
   c. 3600
   d. 240

162. What was the ratio of yields per acre of land for coconuts & lemons?
   a. 3 : 2
   b. 2 : 3
   c. 1: 1
   d. cannot be determined.

Directions for Q. 163 to 167:

Ghosh Babu has a manufacturing unit. The following graph gives the cost for various number of units. Profit Revenue - Variable Cost - Fixed Cost. The fixed cost remains constant upto 34 units after which additional investment is to be done in fixed assets. In any case production can not exceed 50 units.



163. What is the minimum number of units that need to be produced to make sure that there was no loss?
   a. 5
   b. 10
   c. 20
   d. indeterminable.

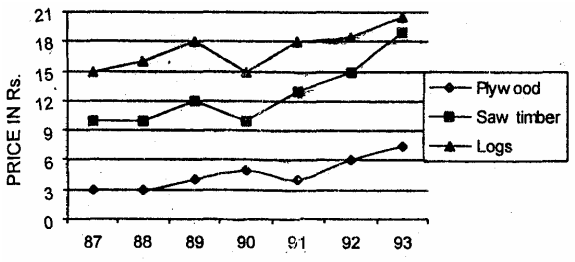
164. How many units should be manufactured such that profit was at least Rs. 50?
   a. 20
   b. 34
   c. 45
   d. 25

165. If at the most 40 units can be manufactured then what is the number of units that can be manufactured to maximise profit?
   a. 40
   b. 34
   c. 35
   d. 25

166. If the production cannot exceed 45 units then what is the number of units than can maximise profit?
   a. 40
   b. 34
   c. 45
   d. 35

167. If the fixed cost of production goes up by Rs. 40 then what is the minimum number of units that need to be manufactured to make sure that there is no loss?
   a. 10
   b. 17
   c. 15
   d. 20

Directions for Q. 168 to 173: In the following chart, the price of logs shown is per cubic meter and that of plywood and saw timber is per ton. Given that 1 cubic meter of Plywood and Saw Timber = 800 kg (1 ton = 1000 kg)



168. What is the maximum percentage increase in price per cubic meter?
   a. 33.33%
   b. 85%
   c. 135%
   d. cannot be determined.

169. Which product shows maximum increase in price?
   a. Saw Timber
   b. Plywood
   c. Logs
   d. None

170. If 1 cubic meter = 750 kg for Saw Timber, in which year was the difference in prices of saw timber and logs the last?
   a. 1989
   b. 1990
   c. 1991
   d. 1992

171. If 1 cubic meter = 700 kg for Plywood, in which year was the difference in the prices of plywood and saw timber the minimum?
   a. 1989
   b. 1990
   c. 1991
   d. 1992

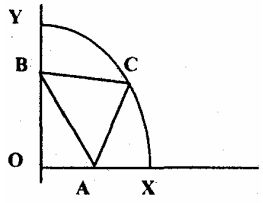
172. If the volume sales of Plywood, Saw Timber and Logs were 40%, 30% respectively, what was the average realisation in 1993 per cubic meter of sales?
   a. 18
   b. 15
   c. 16
   d. 13

173. If in 1994 prices increased by 5%, 1% and 10%, while the volume sales break-up was 40%, 30% for Plywood, Saw Timber and Logs respectively, what was the average realisation?
   a. 18.95
   b. 16.45
   c. 17.65
   d. 10.25

Directions for Q. 174 to 185: Read the following directions carefully and answer the questions and mark as follows:

a) If any one. of the statements alone is sufficient to answer the question.
b) If both statements individually are sufficient to answer the question.
c) If both statements together are required to answer the question.
d) If both statements are not sufficient to answer the question.

174. Find the length of AB? Given that DYBC = ∠CAX = ∠YOX = 90°



   1. Radius of the arc is given
   2. OA = 5
   a. If any one of the statements alone is sufficient to answer the question.
   b. If both statements individually are sufficient to answer the question.
   c. If both statements together are required to answer the question.
   d. If both statements are not sufficient to answer the question.

175. Is n odd?
   1. n is divisible by 3,5,7 and 9
   2. 0<n <400
   a. If any one of the statements alone is sufficient to answer the question.
   b. If both statements individually are sufficient to answer the question.
   c. If both statements together are required to answer the question.
   d. If both statements are not sufficient to answer the question.

176. Find 2⊕3, where 2⊕3 need not be equal to 3Å2
   1. 1⊕2=3
   2. a⊕b = (a+b)/a, where a and b are positive.
   a. If any one of the statements alone is sufficient to answer the question.
   b. If both statements individually are sufficient to answer the question.
   c. If both statements together are required to answer the question.
   d. If both statements are not sufficient to answer the question.

177. Radha and Rani appeared in an examination. What was the total number of questions?
   1. Radha & Rani together solved 20% of the paper.
   2. Radha alone solved 3/5th of the paper solved by Rani.
   a. If any one of the statements alone is sufficient to answer the question.
   b. If both statements individually are sufficient to answer the question.
   c. If both statements together are required to answer the question.
   d. If both statements are not sufficient to answer the question.

178. What is the price of tea?
   1. Price of coffee is Rs. 5 more than that of tea
   2. Price of coffee is Rs. 5 less than the price of a cold drink which cost three times the price of tea.
   a. If any one of the statements alone is sufficient to answer the question.

b. If both statements individually are sufficient to answer the question.
c. If both statements together are required to answer the question.
d. If both statements are not sufficient to answer the question.

179. What is value of a?
1. Ratio of a & b is 3 : 5 where b is positive
2. Ratio of 2a and b is 12/10 where a is positive
a. If any one of the statements alone is sufficient to answer the question.
b. If both statements individually are sufficient to answer the question.
c. If both statements together are required to answer the question.
d. If both statements are not sufficient to answer the question.

180. In a group of 150 students, find the number of girls?
1. Each girl was given 50 paise, while, each boy was given 25 paise to purchase goods totalling Rs. 49
2. Girls and boys were given 30 paisa each to buy goods totaling Rs. 45.
a. If any one of the statements alone is sufficient to answer the question.
b. If both statements individually are sufficient to answer the question.
c. If both statements together are required to answer the question.
d. If both statements are not sufficient to answer the question.

181. There are four envelopes E_1, E_2, E_3, E_4 in which one was supposed to put letters L_1, L_2, L_3, L_4 meant for persons C_1, C_2, C_3, C_4 respectively but by mistake the letters got jumbled up and went in wrong envelopes. Now if C_2, is allowed to open an envelope at random, then how will he identify the envelope containing the letter for him?
1. L_2 has been put in E_1.
2. The letter belonging to C_3 has gone in the correct envelope.
a. If any one of the statements alone is sufficient to answer the question.
b. If both statements individually are sufficient to answer the question.
c. If both statements together are required to answer the question.
d. If both statements are not sufficient to answer the question.

182. There are four racks numbered 1, 2, 3, 4 and four books numbered 1,2,3,4. If an even rack has to contain an odd numbered book and an odd rack contains an even numbered book then what is the position of book 4?
1. Second book has been put in third rack.
2. Third book has been put in second rack.
a. If any one of the statements alone is sufficient to answer the question.
b. If both statements individually are sufficient to answer the question.
c. If both statements together are required to answer the question.
d. If both statements are not sufficient to answer the question.

183. Find the value of X in terms of a?
1. Arithmetic mean of X and Y is 'a' while the geometric mean is also 'a'.
2. X/Y = R; X - Y = D.
a. If any one of the statements alone is sufficient to answer the question.
b. If both statements individually are sufficient to answer the question.
c. If both statements together are required to answer the question.
d. If both statements are not sufficient to answer the question.

184. Two concentric circles C1 and C2 with radii r1 and r2. The circles are such that C1 fully encloses C2, then what is the radius of C1?
1. The difference of their circumference is k cm.
2. The difference of their areas is m sq. cm.
a. If any one of the statements alone is sufficient to answer the question.
b. If both statements individually are sufficient to answer the question.
c. If both statements together are required to answer the question.
d. If both statements are not sufficient to answer the question.

185. A circle circumscribes a square. What is the area of the square?
1. Radius of the circle is given.
2. Length of the tangent from a point 5-cm away from the centre of the circle is given.
a. If any one of the statements alone is sufficient to answer the question.
b. If both statements individually are sufficient to answer the question.
c. If both statements together are required to answer the question.
d. If both statements are not sufficient to answer the question.