

INSTRUCTIONS

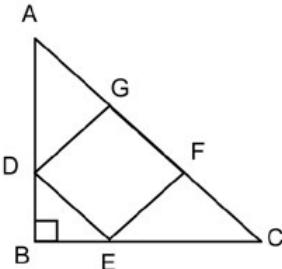
1. Read the instructions given at the beginning/end of each section or at the beginning of a group of questions very carefully.
2. This test has two sections with 60 questions – 30 questions in each section. The TOTAL TIME available for the paper is **140 minutes**. The time available for each section is 70 minutes and you cannot return to the first section once you have started the second section.
3. You are expected to show your competence in both the sections.
4. All questions carry three marks each. Each wrong answer will attract a penalty of one mark.

SECTION – I
Number of Questions = 30

DIRECTIONS for questions 1 to 7: Answer the questions independently of each other.

1. Given $x_1 + x_2 + x_3 + \dots + x_n = 15015$, where n is a natural number and x_1 is an integer. If $x_i - x_{i-1} = 2$, for all $i = 2, 3, \dots, n$, then find the number of different possible values of n .

(A) 18	(B) 32
(C) 16	(D) 36
2. Consider a rectangular grid of lines formed by m parallel lines intersecting n parallel lines that run perpendicular to them. How many different paths along the grid are possible from the top right corner to the bottom left corner, if only downward and leftward motion is allowed?

(A) $\frac{(m+n-2)!}{(m-1)!(n-1)!}$	(B) $\frac{(m+n)!}{m! n!}$
(C) $\frac{(m+n)!}{2}$	(D) $m! n!$
3.
 

In the figure above, triangle ABC is right-angled at B. Further, G and F are points on AC, while D and E are points on AB and BC respectively, such that DEFG is a square. If DG = 6 cm, find the minimum possible length of AC.
4. How many three-digit numbers exist such that their cubes end with 44?

(A) 16	(B) 27
(C) 18	(D) 20
5. A circle and a regular hexagon are drawn in a plane. Find the maximum possible number of points of their intersection.

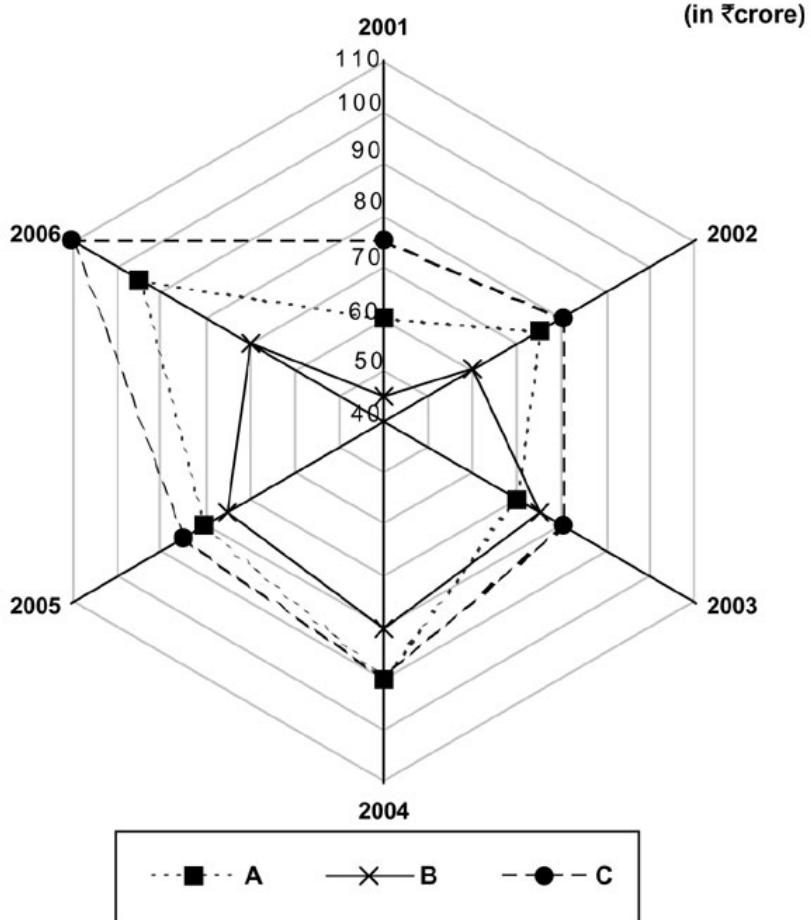
(A) 2	(B) 6
(C) 9	(D) 12
6. Rajat draws a 10×10 grid on the ground, comprising 100 identical squares and numbers the squares from 1 to 100. If he now wants to place two identical stones on any two separate squares in the grid, in how many distinct ways can he do it?

(A) 2475	(B) 4950
(C) 9900	(D) 10000
7. All the two-digit numbers are written in a row in increasing order with a vertical line separating every two consecutive numbers. How many vertical lines are such that the digit immediately to the left of the line is the same as the digit immediately to the right of the line?

(A) 8	(B) 9
(C) 10	(D) 11

DIRECTIONS for questions 8 to 10: Answer the questions on the basis of the information given below.

Sales of three companies A, B and C from 2001 to 2006



DIRECTIONS for question 11: Select the correct alternative from the given choices.

11. Two identical tanks are provided with inlets of different flow rates, such that the first tank can be filled in 10 minutes, while the second tank can be filled in 20 minutes. If the two tanks are placed at the same level and connected at the bottom, and both the inlets are opened simultaneously, how long does it take for both of them to be filled?

DIRECTIONS for questions 12 and 13: Answer the questions on the basis of the information given below.

Aashish intended to travel a certain distance at a certain uniform speed. But after travelling for exactly one hour, he increased his speed by 25%. As a result of this, in the remaining part of the time that he had originally planned for the journey, he ended up covering as much distance as the total distance that he had initially planned for, thereby overshooting his intended distance of travel.

DIRECTIONS for questions 14 to 16: Answer the questions independently of each other.

14. I asked my friend to calculate the sum of the first n natural numbers. He gave me the answer as 660. I later observed that my friend had missed out a number. The number missed out by him was
 (A) 30 (B) 6 (C) 36 (D) 18

15. Shyam, who is standing on a beach, observes that the angle of elevation of the top of a lighthouse is 45° . When he moves a distance of 5 m towards the lighthouse, he finds that the angle of elevation increases to 60° . Find the height (in m) of the lighthouse.

$$\begin{array}{ll} \text{(A)} \ 15 - 5\sqrt{3} & \text{(B)} \ \frac{15 + 5\sqrt{3}}{2} \\ \text{(C)} \ 15\sqrt{3} - \sqrt{6} & \text{(D)} \ 15 \end{array}$$

16. In a number system, the product of 53 and 22 is equal to 1276. The number 4221 of this system when converted to the decimal system will be
 (A) 1483 (B) 3403 (C) 4221 (D) 3097

DIRECTIONS for questions 17 to 20: Answer the questions on the basis of the information given below.

An entrance exam had a total of 185 questions, distributed across five sections – Verbal, RC, Quant, DI and Reasoning. The number of questions in these sections were 40, 30, 45, 35 and 35 respectively. Each correct answer fetched one mark, while $1/3$ rd of a mark was deducted for each wrong answer. Also, no marks were deducted for any unattempted question/s. The following table gives partial information regarding the number of questions attempted, the number of correct and wrong answers and the net score of Divya, a student who wrote the test.

Section	Attempts	Correct Answers	Wrong Answers	Net Score
Verbal	28			
RC				11
Quant	25			
DI			9	
Reasoning		21		

It is also known that,

- though Divya attempted only those questions which she was sure of, she made at least one mistake in each section.
- her net score in each section was a distinct integer and her net score was the lowest in the RC section and the highest in the Verbal section.
- she attempted a total of 119 questions and had an overall net score of 79 marks.
- she did not attempt all the questions in any of the five sections of the test.

17. How many questions did Divya attempt in the Reasoning section?
 (A) 32 (B) 24 (C) 27 (D) 28

18. For how many questions in the DI section did Divya mark the correct answer?
 (A) 13 (B) 15 (C) 18 (D) Cannot be determined

19. In which section are Divya's correct answers as a percentage of her attempts the least?
 (A) RC (B) Quant (C) DI (D) Cannot be determined

20. If it is known that Divya made more number of mistakes in the DI section than in any other section, then what was her net score in the Quant section?
 (A) 13 (B) 15 (C) 17 (D) 21

DIRECTIONS for questions 21 to 26: Answer the questions independently of each other.

21. It has been planned to connect the five cities Delhi, Mumbai, Chennai, Kolkata and Bangalore through a network of super-expressways, with certain conditions. Each of the five cities should be connected to at least three other cities. Also, Delhi, being the national capital, should be connected to all the other cities. What is the minimum number of super-expressways required for this plan?
 (A) 8 (B) 10 (C) 7 (D) 9

22. Two circles with centers at points $(3, 7)$ and $(-1, 4)$ and with radii 2 units and 7 units respectively are drawn in the $x - y$ plane. The number of common tangents that the circles have is
 (A) four (B) one (C) zero (D) three

23. Danny forgot the seven-digit telephone number of his friend but he remembers the following information: the first three digits from the left are either 242 or 472, the digit 7 appears once and the number is an even number. If Danny were to use a trial and error method to reach his friend, what is the minimum number of trials that he has to make so that he can be certain of succeeding?
 (A) 2430 (B) 4860 (C) 9477 (D) 5040

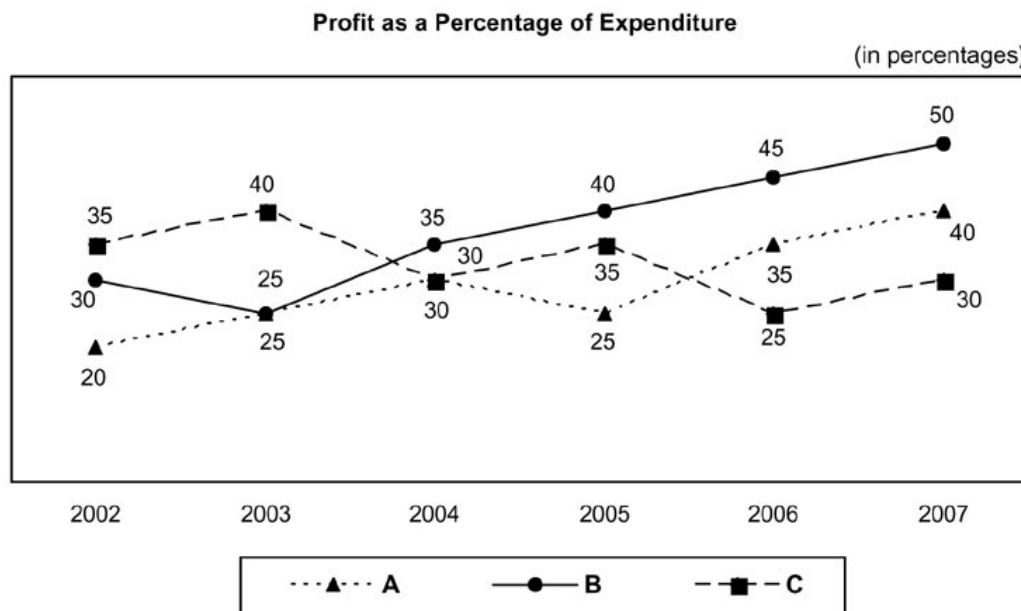
24. N is a positive integer, which when divided by 16, 17 and 18 leaves remainders of 6, 7 and 8 respectively. If $M = N^2 + 5N + 6$, find the remainder when M is divided by 12.
 (A) 2 (B) 6 (C) 8 (D) 4

25. Let $y = \log_2 x$ and $z = |y|^2 + 3|y| - 10$. For which of the following ranges of x is $z \geq 0$?
 (A) $[1/32, 1/4] \cup [4, 32]$
 (B) $(0, 1/32) \cup [4, \infty)$
 (C) $[1/32, 1/4] \cup [2, \infty)$
 (D) $(0, 1/4) \cup [4, \infty)$

26. ABCD is a rhombus with the diagonals AC and BD intersecting at the origin on the $x-y$ plane. If the equation of the line AB is $x - y = 1$, then the equation of the line CD is
 (A) $x - y = 0$ (B) $x + y - 1 = 0$
 (C) $x - y + 1 = 0$ (D) None of these

DIRECTIONS for questions 27 to 30: Answer the questions on the basis of the information given below.

The line graph and the tables that follow give the details of the performance of three companies – A, B and C – for the years 2002 to 2007.



Annual Income
(in ₹crore)

Company \ Year	2002	2003	2004	2005	2006	2007
A	149.4	173.4	176.2	227.4	223.4	241.7
B	157.6	164.7	179.4	185.3	204.6	268.4
C	189.2	172.3	138.7	174.4	210.8	224.5

Percentage break-up of total Expenditure

(in percentages)

Year	2002			2003			2004			2005			2006			2007		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Raw materials	15	20	30	20	15	10	25	20	20	20	15	25	30	25	10	15	20	10
Salaries	25	30	25	20	20	35	30	30	30	35	25	35	25	20	20	40	35	30
Power	20	20	20	30	30	20	10	15	10	15	10	10	15	25	25	15	15	10
Overheads	15	10	15	10	20	15	15	20	20	15	30	15	25	20	20	20	10	20
Transport	25	20	10	20	15	20	20	15	20	15	20	15	5	10	25	10	20	30

$$\text{Profit Percentage} = \frac{\text{Income} - \text{Expenditure}}{\text{Expenditure}} \times 100$$

27. In how many of the given years is the expenditure on salaries of one or more companies equal to the profit of the respective company in that year?
 (A) 4 (B) 3 (C) 5 (D) 6
28. In which of the following years is the ratio of the expenditure of company A to that of company B the highest?
 (A) 2002 (B) 2005
 (C) 2003 (D) 2006
29. For how many of the given companies is the ratio of income to expenditure more than $\frac{5}{4}$ but less than $\frac{3}{2}$ in at most four of the years given?
 (A) 0 (B) 1 (C) 2 (D) 3
30. In the year 2007, if the total expenditure incurred on each of the five cost heads by all the three companies together is considered, then the expenditure on which cost head is the highest in that year?
 (A) Raw materials (B) Salaries
 (C) Power (D) Transport

SECTION – II

Number of Questions = 30

DIRECTIONS for questions 1 to 4: Read the following passage and answer the questions that follow it.

An expanding economy is capable of destabilizing nature. It is not necessary to assume that its expansion relies on the exploitation of natural resources. There is a need for action even though the economy may be less concerned by the consequences of the destruction of the environment than other social systems, for example, the societal community.

In a stimulating article on the reasons why "big rare whales still die," Gonigle (1980) describes the conflict between ecology and economy as the consequence of the "economizing" of the ecology. For him ecology means more than merely the protection of the natural environment. "Economy" and "ecology" stand for different sets of "decision rules." The difference between the two sets of decision rules is defined by the different time horizons each implies. Because they provide for future needs, economic decisions are directed to the future. But their time horizon is restricted to the short term. Long-term problems are not considered in rational investment decisions. The investor, neglecting the future, pursues a strategy of maximizing returns, even if this leads to the exhaustion of the natural resources on which he depends. In contrast to economic decision making, ecological decision making acknowledges that the earth has to be preserved for future generations. Therefore, present needs have to be weighed against future ones. From the ecological point of view, economic behavior can be regarded as an attack of the present on the future. In terms of economics, market allocation is suboptimal in intertemporal and intergenerational respect.

Gonigle sees the extermination of big whales as connected with the general problem of the lack of integration between the economic system and its natural environment. For him the solution to the problem lies in the politics of ecological transition. The result of such a transition would be the institutionalization of a radically changed mode of decision making. Gonigle describes this in conventional terms as "democratic" decision making that should take into consideration the interests of the natural environment. But Gonigle does not explain what he means by "democratic." Usually, democratic decision making is identified with the participation of the workers in the investment decisions of the firm. Following this conventional definition, one would have to explain how the participation of the workers is necessarily a means to integrate the interest of the natural environment. Quite the opposite can happen. The postwar growth of the European welfare states was based on a capital-labor accord that included the reckless disregard of the consequences of growth to the natural environment.

If we want to minimize ecological risks, more than a vague appeal to democratic decision making is required. We must explore the available strategies to sensitize the economic system to the destructive consequences that "ceaseless accumulation" has on the environment of the system. The recent literature on control strategies and social planning attempts to explore the potential of institutional change by "self-control". Self-control replaces state intervention, but it is not the same as deregulation. Under self-control the political system helps to increase the capacity of the economy to organize itself. The principle of self-control may be summarized as follows: the economy is restructured in a way that enables it to become aware of the side effects of economic decisions in the environment of the economy. As the capacity of self-control increases, the economic system stops maximizing efficiency without regard to the environment: the standards of a healthy environment are taken into account in economic decision making. By this measure, the purposive rationality of economic decision making is increased insofar as the purposive rationality of decisions depends on the capacity of a system to be aware of the consequences of its actions.

These consequences may be indirect, remote, or noneconomic in nature. To internalize standards of rationality that include the environment does not imply giving up, in toto, the pursuit of self-interest or of system-specific goals. Rather it means that these goals must be pursued in such a way that the side effects of pursuing these goals are taken into account from the beginning.

Each reorganization of the economy that is based on self-control amounts to an increase in the perceptive faculty of the economy. One possible way of attaining the required institutional change is to monetarize the ecology, that is, ecologize the economy by economizing the ecology. As long as nature is a free good, rational decision making has to treat it as such.

1. What is the author attempting to illustrate through this passage?
 - (A) How the refusal of the economy to take ecological concerns into account renders state intervention necessary.
 - (B) How the efficiency of the economy leads to a neglect of the environment.
 - (C) The possibility of an ecologically sensitive capitalist economy.
 - (D) The impairment of the natural environment by economic growth having repercussions on the functioning of the economy.
 2. What according to Gonigle, is the reason that big rare whales still die?
 - (a) In pursuit of growth, the disregard of the consequences to the natural environment.
- (b) The separation of economic objectives from the broader context of the biosphere.
(c) A capitalist system that does not keep within reasonable limits.
(d) The ecological problems arising from the ceaseless movement of accumulation.
(e) Long term problems are not considered in rational investment decision rules.
(f) Strategy of maximising returns and democratic decision making should integrate the interests of the natural environment.
- (A) b, d and f
(B) a and b
(C) a, d and e
(D) c, e and f

DIRECTIONS for questions 5 and 6: The sentences given in the following questions, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a letter. From among the four choices given below the question, choose the most logical order of sentences that constructs a coherent paragraph.

5. (a) There was talk, too, of angels, and a financial reserve was set up for legal battles with the churches.

(b) And then the lightning struck.

(c) But they had to go on further, fearlessly, and ever forward, because stagnation is the death of production.

(d) However, certain technical problems still had to be ironed out: what should the wings be made of; feathers might irritate the nose; should they be movable, or would that get in the way; how about the halo, what sort of switch to turn it on, where to put the switch, etc.

(e) Already in the works was an Olympus for individual use; already the first androids in the shape of Greek gods and goddesses were being fashioned out of plastic in the blazing ateliers of Cybordelics.

(A) adbce
(B) ceadb
(C) edcba
(D) bcdea

DIRECTIONS for question 7: The following question has a paragraph from which the last sentence has been deleted. From the given options, choose the sentence that completes the paragraph in the most appropriate way.

7. When justice is denied by a society, including a socialist, secular and democratic one as in India, expectations darken into depression. Then that depression turns into dread, dread transforms itself into despair and despair evolves into explosive terrorism. State violence as an instrument to suppress terrorism is futile. After a time the bitterness and revengefulness that is generated will seek to overthrow those very forces that control state power – call it fascism, naxalism, Maoism or whatever.

(A) When the rule of the robes proves a mirage, the rule of terrorism gets support and sanction.

(B) The system of justice, justices and justicing must be made truly accessible to the have-nots by means of radical judicial reform.

(C) The dangerous deterioration of democracy into bedlam terrorism is hastened when access to justice ceases to be a reality.

(D) A revolution is necessary and a sense of scientific spirit and reason is needed if the judicature is not to become a caricature.

DIRECTIONS for questions 8 to 12: Read the following passage and answer the questions that follow it.

History is particularly complex and historians disagree on exactly what it is. Historical sciences are concerned with chains of proximate and ultimate causes, purpose and function. Most people see history in terms of separate periods (whether, for example, classical, medieval or modern), with each typified by a different way of life. At the same time, the study of history is often characterised as solely concerned with recovering facts about the past. Seen in this way, history is like a book, with each chapter charting a different phase or epoch of human development of Europe: the rise and fall of Greece and Rome; the emergence of the Catholic Church; the heraldry and Crusades of the Middle Ages; the Renaissance and Reformation; or the technology and social change of the Industrial Revolution; although the periodisation is very different elsewhere. In similar fashion, popular perceptions of the process of historical change are founded on the idea of progress, a belief that each new era brings to human society a more sophisticated sense of being.

History is also about roots. It provides societies and individuals with a dimension of longitudinal meaning over time which far outlives the human life-span. It connects us with our past. This is why, in recent times, memory has become such an important feature of historical study. Indeed, for some authors, heavily influenced by postmodernism and the undermining of historical objectivity and authorial certainty, memory has become a form of history distinct from the history of which it was once merely a part. The use of memory becomes particular powerful and important in tragic or vicious aspects of the human past. Holocaust survivor memories would be one very clear example. Memory also becomes important for connecting divergent or warring communities to different interpretations, or differing aspects, of a shared past. The history of the Troubles in Northern Ireland provides a case in point. History also has a function beyond the remembrance or recollection of, or writing about, our past: it allows us to peer into the future by providing precedents for contemporary action, forewarning against the repetition of past mistakes. From its sense of continuity, history offers apparent form and purpose to past, present and future. There is seen to be a need for history. It has social value, and its study is both important and rewarding. But many of its certainties have been challenged in more recent times.

Recently, the very notion that history is a fact-based discipline has come under scrutiny. The idea that history is a branch of the humanities has been consistently undermined by its growth as a social science. Over the past thirty years or so, innovative work in sociology, psychology, anthropology and many other disciplines has been brought to bear on the practice of history. More recently, pressure has been applied to the old certainties of history by philosophers of the discipline, such as Alun Munslow and Keith Jenkins, who, drawing inspiration from French philosophy and from the important American writer, Hayden White, have popularised the views that history is a fictional enterprise created in the minds of historians and the seemingly revolutionary developments in history over the past generation or so have been underpinned further by the systematic development of areas of historical inquiry which might once have seemed marginal: class and gender; ethnicity and race; culture and custom; immigrant or minority groups; women and children. Although factually orientated political history has never gone away (not that it should do so), there has been a decided shift, at least in the teaching of the subject, towards what Peter Burke calls 'new perspectives' in historical writing. Historians today are much more receptive to the theories of social science. The methodological implications of new discourses have also been considerable, with historians now looking well beyond the official government-type documents which fuelled most nineteenth-century scholarship. The book *Studying History* offers historians a route across the shifting and often confusing grounds of historical inquiry. The principal task is to present a clear overview of the most important of these changes and to note their impact upon scholarship; equally, however, apparent continuities must also be highlighted. Historians should spot the parallels even in times of technological changes.

8. The author is most likely to agree with which of the following statements?
 - (a) The past is not simply a hotchpotch of facts and history is more than just the past. It is not just a collection of distinct ages.
 - (b) Historians can formulate only statistical trends because the methodologies in the subject have not developed sufficiently to predict outcomes at macroscopic levels.
 - (c) The popular view of history tends to smooth out the contours of the past, brushing away its inconsistencies.
 - (d) History is more than a fact-based discipline; with fresh sociopsychological influences, it has broader implications.
 - (e) Historians are not interested in evolution of human history and are only interested in long term predictions.
 - (f) According to popular opinion, historical change does not involve progress from one period to the next but needs to be studied in the background of the individual era or epoch to which it is a part of.
9. The author mentions White to suggest that a shift has occurred in perspective whereby
 - (A) history has been relegated to the margins of social science.
 - (B) the margin has now been moved to the centre of historical inquiry.
 - (C) history marginalizes social classes that have no voice.
 - (D) history is subverted by historians who pursue their own agenda.
10. The primary purpose of the sentences in the last paragraph ("Recently Nineteenth century scholarship") is to
 - (A) imply that history is changeable.
 - (B) explore methodology as an aspect of teaching history.
 - (C) examine the changing nature of historical inquiry.
 - (D) offer a route across the shifting grounds of historical inquiry.

11. All of the following can be understood from the passage EXCEPT?

 - (a) Historians have a stake in the ultimate consequences of the method they employ and there are other procedures different from those applied in popular sciences that can be applied to history.
 - (b) The extract is taken from the introductory chapter of a book on history.
 - (c) A historian today, is unbiased but not subjective in his analysis and presentation of history.
 - (d) History today, is about social value, roots, linearity of meaning over time, has memory as a form and can involve the study of vulnerable tribal groups in a region.
 - (e) It is more difficult to understand human history than to understand problems in fields of science where history is unimportant and where fewer individual factors operate.
 - (f) Historical sciences evince an interest in the basic reasons underlying observable changes.

(A) a, b, c and e	(B) b, e and f
(C) a, c, d and f	(D) b, d and e

12. Consider the ideas given in the paragraph below as true:

Natural experiments in any field, whether ecology or history, are inherently open to methodological criticism such as confounding effects of natural variation in additional variables besides the one of interest. A historian should utilize the inferences from such experiments conducted not just on the five inhabited continents as systems but also from islands that have developed complex societies in a considerable degree of isolation (Madagascar, New Guinea, Mexico, Peru, Guatemala, Guadalcanal, Native American Hispaniola) as well as societies on hundreds of smaller islands and regional societies within each continent.

Which of the following statements would best concur with the above ideas and the theme of the main passage?

- (A) Isolated islands can help historians study how humans evolved there as these facts have not been properly documented. They can better analyze explanations derived from self-evident propositions or from observed facts.
 - (B) Isolated islands offer historians a better study of cause-effect relationships and cultural roots as complex societies there provide great opportunities for natural experiments.
 - (C) Isolated islands increase the number of data points for historians who can then view the theories of social science in a different light.
 - (D) Isolated islands, probably differing in size and endowments, and exhibiting rich cultural heritage and social class diversity can offer historians a new perspective of historical writing through inferences from a variety of natural experiments in social science or anthropology.

DIRECTIONS for question 13: Fill in the blanks in the paragraph below and choose the appropriate answer which has all the words correctly placed.

13. To renounce one's liberty is to renounce one's _____ as a man, the rights and also the duties of humanity. For him who is made to

renounce everything, there is no possible
_____. Such a renunciation is
_____ with man's nature, for to take away
all freedom from will is to take away all morality from
his actions. In short, a convention which
_____ absolute authority on the one side
and unlimited obedience on the other is
_____ and contradictory.

- (A) encumbrance, bondage, incongruous, harbours, antithetical.
 - (B) quality, compensation, incompatible, stipulates, vain.
 - (C) incarnation, justification, inchoate, delegates, subversive.
 - (D) essence, compunction, inexorable, endorses, invaluable.

DIRECTIONS for question 14: In the question, there are sentences or parts of sentences that form a paragraph. Identify the sentence(s) or parts of sentence(s) that is/are correct in terms of grammar and usage, including spelling, punctuation and logical consistency. Then choose the most appropriate option.

DIRECTIONS for question 15: In the following question, the word in capitals is used in four different ways. Choose the option(s) corresponding to the sentence(s) in which the usage of the word is INCORRECT or INAPPROPRIATE.

15. LET

- (A) Ramesh did not know what he was letting himself for when he agreed to give the strangers a lift in his car.
 - (B) The girls were planning to give their mother a surprise on her birthday but little Alice let the cat out of the bag.
 - (C) He's been giving interviews at various places, letting on that he is an MBA from Harvard Business School.
 - (D) The American government had promised to let up on the Narendra Modi U.S. visa issue in case Mr. Modi became India's next prime minister.

DIRECTIONS for questions 16 to 19: Read the following passage and answer the questions that follow it.

In the fun-house mirror of the present, the contours of the twentieth century have assumed a strange symmetry. It begins and ends with imperialism. The century opens with the West plundering the Rest, until one Asian nation, Japan, joins the action and becomes an empire itself. In the century's last decade, the pattern repeats: the forces of liberal capitalism are again as dominant as ever, only this time China is the apt pupil of Western rapacity. The way historians speak of the present in terms of "imperialism," "anti-imperialism" and "the rise of Asia" makes the burst of decolonization after World War II seem like an interlude in a perpetual age of empire. The temptation to see Western colonials still lording it over hapless subalterns continues to guide our understanding of the relations between the "North" and "South" since the end of formal imperialism in the 1960s. But this perspective passes over the major structural changes in the history of the postwar decades, when the United States reconceived its mission in the world and new nations were no longer willing to support it on the same terms. Without grasping how this new configuration of forces reshaped the world order, we will continue to misidentify ways to change it.

It does not help that the best-known attempt in the twentieth century to forge a more equitable international arrangement without the blessing of the West remains mired in nostalgia. In 1955, a group of Asian and African leaders met in the city of Bandung in West Java, with the aim of strengthening economic and cultural cooperation. Though many of the participating states were aligned with the United States or the Soviet Union, their leaders made a show of rejecting the polarities of the Cold War and ending colonialism and racism. They declared their right to have their voices heard in the UN Security Council and to pursue collective defense.

For an alternative to globalization under Anglo-American auspices, there is a less mystical place to look than Bandung. In 1964, the United Nations General Assembly established its Conference on Trade and Development (UNCTAD), which was determined to revise Bretton Woods through the official channels of the UN. Led by the Argentine economist Raúl Prebisch and including many members of the Non-Aligned Movement, UNCTAD sought to renegotiate debt, change development policies, reclaim sovereignty over natural resources, and reduce the barriers of entry for third world goods on the Western market. In 1973, the organization announced plans for the "New International Economic Order," taking a stand against the industrialized world's protectionism and the austerity measures demanded by the International Monetary Fund of countries to whom it made loans. UNCTAD was meant to be, in the words of Tanzanian President Julius Nyerere, "a trade union of the poor" – one which understood that, to negotiate effectively with the West, it would have to bargain collectively.

In *After Empires*, his granular new history of UNCTAD, Giuliano Garavini, a historian at the University of Padua, recovers a golden opportunity in this attempt by the third world to recalibrate world trade. In the 1970s, European officials, emboldened by their first steps toward economic integration, started looking to the Global South as a "most favored [trading] partner" in an effort to reorient the global economy in a new direction, against Anglo-American wishes. Two Dutch socialists – Sicco Mansholt, the president of the European Commission, and Jan Tinbergen, the Nobel Prize-winning economist – led the charge to pin the political identity of the European Union on improving the lot of its southern neighbors. Their program was swept away by the oil crisis, but Garavini's superbly researched history shows how determined Europeans were in honoring the interests of the South – to the point of considering radical plans for the nationalization of Western industries and global financial redistribution. Still, an important premise of Giuliano Garavini's book is the fact that the power and influence of the United States, which enjoyed the status of the Sole Superpower for many decades, has been reduced post 1964 and this has helped level the playing field for China, European Union, Russia, India and Brazil.

16. It can be inferred that the "Symmetry" mentioned in the passage is being ascribed to
(A) the dominant forces of Western empire at the beginning and the end of the twentieth century.
(B) the dominance of the West in the political affairs of Asia at the beginning and the end of the twentieth century.
(C) the colonization of the poor by the West at the beginning and the end of the twentieth century.
(D) the dominance of imperial institutions at the beginning and the end of the twentieth century.
17. All of the following statements can be understood from the passage EXCEPT?
(a) The author discusses the United States primarily in order to assure the reader that an ascendant Asia is fully capable of challenging the West and to argue that East-West polarities are a myth.
(b) European imperialists perpetrated communism and the New International Economic Order had a very short day in the sun.
18. Which of the following past events and future scenarios are most likely to weaken the argument of Giuliano Garavini as given in the last paragraph?
(A) The United States angled to break the alliance between OPEC countries and poorer nations that wanted to create similar cartels for raw materials. The oil crisis of the 1970s ended up doing that job for them. OPEC Countries which might have channelled some of their cash surpluses into poorer countries or built up burgeoning Islamic banks, instead funnelled their dollars through New York, in effect handing back the keys of the global economy to the United States.

- (B) In the economic field, the expanding GDPs of mega nations like India are providing opportunities to highly educated and skilled persons at home as never before. This has reduced the brain drain to a trickle. In the early 1980s, 75% of the graduates of the high-caliber Indian Institutes of Technology migrated to North America. Now the figure is down to 5%.
 - (C) In a reconfigured East Asia, with one-third of the global population, the People's Republic of China had become not just the economic fountain-head, surpassing Japan, but also the leader in all non-military fields, pushing America off its perch. Beijing recently stacked up U.S. Treasury Bonds with the malevolent intent of twisting Uncle Sam's arm in the none-too-distant future. By over-reacting to 9/ 11 attacks and mounting two major wars while reducing taxes at home, Bush had bolstered the power and glory of the Middle Kingdom.
 - (D) The fiscal tempest caused by the reckless policies of Washington, originating in Ronald Reagan's presidency in the 1980s, along with the crash in the value of wide ranging assets in North America and the European Union, has made the Chinese model of the state-guided economic development attractive to developing nations, particularly in Africa and Latin America.

19. The first paragraph addresses which of the following issues related to the history of the world in the twentieth century?

- (A) Whether there exists no global alternatives to liberal capitalism.
 - (B) How we make the mistake of seeing the world as still 'larded over' by Western Colonials when, in fact, the third world and the BRICS states are able to assert themselves, to some extent, in world trade.
 - (C) How no convincingly universalist response to Western ideas of politics and economy exists today.
 - (D) Whether the greatest beneficiaries of imperialism are those most determined to defend it.

DIRECTIONS for question 20: The following question has a paragraph from which the last sentence has been deleted. From the options, choose the one that completes the paragraph in the most appropriate way.

20. When a mistake happens some of us instead of accepting it or trying to find out the reasons, try and justify it by saying it is not our fault or the conditions were beyond our control or that an error was bound to occur. We even justify our actions as the best way the situation could have been handled. This kind of justification blocks our thinking on better ways we could have dealt with the situation or be receptive to alternative ideas from others.

- (A) Some of us are prone to believing that we keep making the same mistakes because of a personality flaw.

(B) Believing that our action was totally reasonable prevents any learning from the mistake.

(C) Mistakes often occur due to the tendency to rush things and the need to conform to a culture that appreciates speed.

- (D) Though we vow to learn from the mistakes, most of the times we find ourselves making more mistakes or repeating the same ones.

DIRECTIONS for question 21: The question has a statement. Pick from the options the most appropriate restatement of the given statement. Note that all choices may be grammatically correct but you have to pick the one that is closest in meaning to the given statement.

21. There will always be a divide between those who believe that human behaviour should be regulated in the interest of the common good and those who believe the common good will emerge out of the aggregate exercise of free will.

- (A) People who believe that human behaviour should be organized with the common good in mind and those who believe that the common good will accrue from the exercise of individual freedom will always disagree with one another.
 - (B) Disagreement about altering human behavior to suit common interests is bound to occur.
 - (C) Those who think people should be free and those who say human behaviour should be regulated will always be at loggerheads with one another.
 - (D) The freedom of individuals should be based on the common good of society. People who think the common good should qualify individual behaviour will always disagree with those who advocate unrestricted freedom.

DIRECTIONS for questions 22 to 25: Answer the questions on the basis of the information given below.

In Rangeela land, there are only three types of people: Lalpilas, Pilharas and Haralals. Lalpilas always get confused between Red and Yellow (i.e. they see Yellow as Red and vice versa.) but can see every other colour properly. Pilharas always get confused between Yellow and Green but can see every other colour properly and Haralals always get confused between Red and Green but can see every other colour properly.

22. Three persons, Amar, Akbar and Anthony, belonging to Rangeela land made the following statements:

23. If two persons, Dhiraj and Suraj' of Rangeela land made the following statements:

- Dhiraj : *Feroz is wearing a red hat. Feroz is wearing a yellow shirt.*
Suraj : *Feroz is wearing a red hat. Feroz is wearing a green shirt.*

then Suraj is a

- (A) Lalpila
 - (B) Pilhara
 - (C) Haralal
 - (D) Such a conversation is not possible.

Additional information for questions 24 and 25:

Jai and Veeru who belong to Rangeela land made the following statements:

- Jai : Veeru is a Haralal. Phoolan is wearing a yellow saree.
 Veeru : Jai is a Lalpila. Phoolan is wearing a yellow saree.

It is also known that Jai always lies with respect to what he knows or what he sees, while Veeru always tells the truth with respect to what he knows or what he sees.

24. Veeru is a
 (A) Lalpila. (B) Pilhara.
 (C) Haralal. (D) Cannot be determined
25. What is the colour of Phoolan's saree?
 (A) Green (B) Red
 (C) Yellow (D) Cannot be determined

DIRECTIONS for questions 26 to 29: Answer the questions on the basis of the information given below.

The following table gives the number of votes obtained by four movies – Sholay, DDLJ, Mother India and Lagaan – in a poll to determine the greatest movie ever, according to people of different age groups. The movies are disguised in the table as A, B, C, and D, in no particular order.

Age group (years)	Movie			
	A	B	C	D
Less than 18	270	190	245	190
18 - 30	320	220	280	165
31 - 45	160	210	225	235
Above 45	150	280	200	260

It is known that:

- (i) among the people of the less than 18 years age group, Mother India secured the least number of votes.
 (ii) the difference between the total number of votes secured by DDLJ and Lagaan is 50.

26. If it was known that Sholay was A, what can be said regarding the following two statements?
 (a) Mother India received the least number of votes in total.
 (b) DDLJ received the highest number of votes in total.
 (A) If statement (a) is true, then statement (b) is definitely true.
 (B) Only statement (a) is definitely true.
 (C) Only statement (b) is definitely true.
 (D) Both the statements are definitely true.

27. If one of DDLJ or Lagaan received the highest number of votes in total, then which of the following statements is definitely true?
 (A) Sholay received the least number of votes in total.
 (B) Among the people of the 31-45 years age group, Sholay received the least number of votes.

- (C) Mother India received its lowest number of votes from the people of the 18-30 years age group.
 (D) None of the above

28. If it is known that the difference between the total number of votes secured by DDLJ and Mother India was the maximum possible, at least how many of the following statements are simultaneously true?

- (a) Among the people of the above 45 years age group Mother India got the highest number of votes.
 (b) DDLJ got its least number of votes from the people of the less than 18 years age group.
 (c) DDLJ got the highest number of votes in total.
 (d) Sholay got the highest number of votes from the people of any single age group.
 (e) Lagaan got a total of 900 votes.

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

29. At most how many of the following statements can be simultaneously true?

- (a) Sholay got its least number of votes from the people of the above 45 years age group.
 (b) DDLJ got the highest number of votes in total.
 (c) Lagaan got its highest number of votes from the people of the 18-30 years age group.
 (d) Mother India did not get the least number of votes in total.
 (e) Sholay got more votes in total than Lagaan.

- (A) 1 (B) 2 (C) 3 (D) 4

DIRECTIONS for question 30: The question is followed by two statements, I and II, giving certain data. You have to decide whether the information provided in the statements is sufficient for answering the question.

Choose (A) if the question can be answered by using statement I alone, but cannot be answered by statement II alone.

Choose (B) if the question can be answered by using statement II alone, but cannot be answered by using statement I alone.

Choose (C) if the question can be answered by using either statement alone.

Choose (D) if the question can be answered by using both the statements together, but cannot be answered by using any one statement alone.

30. Any student who can crack the CAT can also ace the ACT. If there are 42 students in the class, how many of them can ace the ACT but not crack the CAT?

- I. 23 students in the class can ace the ACT.
 II. The number of students in the class who can either crack the CAT or cannot ace the ACT is 35.

(Key and Solutions for AIMCAT1514)

Key

SECTION – I

- | | | | | | |
|------|-------|-------|-------|-------|-------|
| 1. B | 6. B | 11. D | 16. D | 21. A | 26. C |
| 2. A | 7. B | 12. B | 17. C | 22. B | 27. A |
| 3. D | 8. A | 13. A | 18. B | 23. B | 28. B |
| 4. C | 9. C | 14. B | 19. C | 24. C | 29. C |
| 5. D | 10. D | 15. B | 20. C | 25. D | 30. B |

SECTION – II

- | | | | | | |
|------|-------|-------|-------|-------|-------|
| 1. C | 6. D | 11. A | 16. D | 21. A | 26. B |
| 2. B | 7. B | 12. D | 17. A | 22. B | 27. D |
| 3. C | 8. D | 13. B | 18. A | 23. D | 28. C |
| 4. D | 9. B | 14. C | 19. B | 24. B | 29. D |
| 5. B | 10. C | 15. A | 20. B | 25. A | 30. B |

Solutions

SECTION – I

Solutions for questions 1 to 7:

1. Given

$$x_1 + x_2 + x_3 + \dots + x_n = 15015$$

since the numbers form an arithmetic progression with a common difference of 2,

$$\frac{n}{2} [2x_1 + (n-1)2] = 15015$$

$$\Rightarrow n[x_1 + n - 1] = 15015 = 3(5)(1001)$$

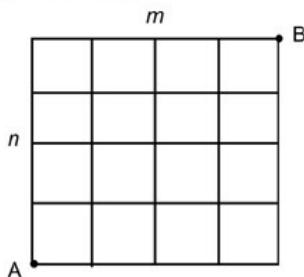
$$= 3(5)(7)(11)(13).$$

Since 15015 has $2^5 = 32$ factors, n can assume 32 values in total.
Choice (B)

2. The easiest way of solving this problem is by taking the value of m and n as 3 and 3 and checking the number of ways manually. Only Choice (A) satisfies.

Alternative solution:

The path will be composed of $(m+n-2)$ segments, each of length equal to the length of the side of squares of the grid. Out of these, $(m-1)$ segments will be horizontal and $(n-1)$ will be vertical.



\therefore Number of paths = number of ways of choosing $(m-1)$ segments out of $(m+n-2)$ segments.

$$= \binom{m+n-2}{m-1}$$

$$= \frac{(m+n-2)!}{(m-1)!(n-1)!}$$

Choice (A)

3. Triangles AGD and EFC are similar.

$$\therefore \frac{DG}{CF} = \frac{AG}{EF}$$

$$\therefore (AG)(CF) = (DG)(EF) = DG^2 = 36$$

When the product of two quantities is constant, their sum is minimum when the quantities are equal.

\therefore AG + CF is minimum when AG = CF = $\sqrt{36} = 6$ cm.

\therefore AC = AG + GF + CF has a minimum value of 18 cm.

Choice (D)

4. If the cube of a number ends with a 4, then the number also ends with a 4. Let $(10K+4)$ represent a three-digit number such that $(10K+4)^3$ ends with 44.

Since $(10K+4)$ is a three-digit number, K is a natural number and $10 \leq K \leq 99$.

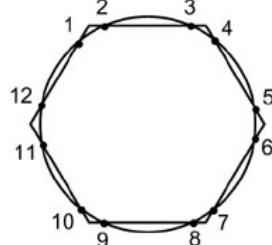
Now in $(10K+4)^3$ i.e., in $1000K^3 + 1200K^2 + 480K + 64$, the last two digits are decided by the last two terms, i.e., $480K + 64$. The units digit is known to be 4. The ten's digit of $(10K+4)^3$ is the ten's digit of $480K + 64$ or the units digit of $48K + 6$ i.e. the units digit of $8K + 6$.

Now if the unit's digit of $8K + 6$ ends in 4, then K must end in either 1 or 6.

So K can be 11, 16, 21, 26 --- 91, 96, i.e., a total of 18 values.

Hence, a total of 18 three-digit numbers exist such that their cubes end in 44
Choice (C)

- 5.



As shown above, the numbers of points of intersection can be at most 12. [When the radius of the circle is greater than

$\frac{\sqrt{3}}{2}$ times the side of the hexagon but less than the side of the hexagon]

Choice (D)

6. The number of ways of picking two squares out of 100 (numbered) squares = ${}^{100}C_2 = 4950$ Choice (B)

7. The required patterns are
 11|12 22|23 33|34 44|45 55|56
 66|67 77|78 88|89 89|90
 There are 9 vertical lines. Choice (B)

Solutions for questions 8 to 10:

8. It can be seen that only for A and B did the value of sales in 2006 became more than one and half times its value in 2001. The percentage increase in the sales of

$$A = \frac{95 - 60}{60} \times 100 = 58.33\%$$

$$B = \frac{70 - 45}{45} \times 100 = 55.55\%$$

It is higher for A. Choice (A)

9. The highest percentage increase in the sales in a year when compared to the previous year is for company B from 2001 to 2002, $\frac{60 - 45}{45} \times 100 = 33\frac{1}{3}\%$

Choice (C)

10. The combined sales of A, B and C was 70% of the sales of the entire industry in each year. To calculate the percentage increase in the total sales of the industry, we need to only find the percentage increase in the combined sales of A, B and C. The combined sales of A, B and C in the given years were:

2001 – 180 crores

2002 – 215 crores

2003 – 225 crores

2004 – 260 crores

2005 – 240 crores

2006 – 275 crores

The percentage increase in 2002, which is approximately 20%, is the highest. Choice (D)

Solution for question 11:

11. We can consider the two tanks together to now become a single tank of twice the volume. Hence the each inlet alone would take twice the respective times given. i.e., $10 \times 2 = 20$ minutes and $20 \times 2 = 40$ minutes.

$$\therefore \text{Together they will take } \frac{20 \times 20}{20 + 40} = 13\frac{1}{3} \text{ minutes.}$$

Choice (B)

Solutions for questions 12 and 13:

Let the planned speed of Aashish be u and the planned duration be t .

Planned Trip	A	B	C
	u	u	

Actual Trip	A	B	C	D
	u		$5u/4$	

$$AC = BD \text{ or } AB = CD$$

The speed on BD or BC is $(5/4)u$

\therefore The time initially planned for BC (say d_1) is say t_1 .

At speed of $\frac{5u}{4}$, the actual distance covered in t_1 is $\frac{5}{4}d_1$

$BD = AC = \frac{5}{4}d_1 = \frac{5}{4}(BC)$. If BC is 4 parts AC is 5 or AB is 1.

12. To cover 1 part, Aashish takes 1 hour. To cover 5 parts he needs 5 hours. Choice (B)

13. BC : BD = 4 : 5. To cover BD(5 parts) Aashish takes 4 hours.

To cover BC, 4 parts be taken $\frac{4}{5}(4)$ hour = $3\frac{1}{5}$ hour.

To cover AB + BC he takes $(1 + 3\frac{1}{5})$ hour

= 4 hours 12 minutes. Choice (A)

Solutions for questions 14 to 16:

14. Let the missed number be x .

$$\Sigma n - x = 660$$

$$x = \Sigma n - 660$$

$$\text{If } n = 35, \Sigma n = 630$$

$$\text{If } n = 36, \Sigma n = 666$$

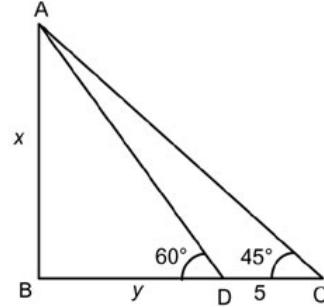
We can see that Σn should be greater than 660.

$$\therefore \Sigma n = 666$$

$$\therefore x = 666 - 660 = 6.$$

Choice (B)

- 15.



AB is the lighthouse. Let its height be x .

At C, the angle of elevation is 45° and at D, it is 60°

$$DC = x - \frac{x}{\sqrt{3}} = x \left(\frac{\sqrt{3} - 1}{\sqrt{3}} \right) = 5 \text{ m (given)}$$

$$\therefore x = \frac{5\sqrt{3}}{\sqrt{3} - 1} \text{ m}$$

$$= \frac{5\sqrt{3}(\sqrt{3} + 1)}{2} = \frac{15 + 5\sqrt{3}}{2}$$

Choice (B)

16. Let the base of the number system be a .

$$\therefore (53)_a (22)_a = (1,276)_a$$

$$\Rightarrow (5a + 3)(2a + 2) = (a^3 + 2a^2 + 7a + 6)$$

$$\Rightarrow 10a^2 + 6a + 10a + 6 = a^3 + 2a^2 + 7a + 6$$

$$\Rightarrow 10a^2 + 16a = a^3 + 2a^2 + 7a$$

$$\Rightarrow a^2 - 8a - 9 = 0$$

$$\Rightarrow (a + 1)(a - 9) = 0$$

$$\Rightarrow a = -1 \text{ or } +9$$

Now -1 is discarded, since the base of any number system is always a natural number greater than 1.

Alternatively, using number system multiplication, when we multiply 53 and 22, the product of 2 and 3 is 6 (which is the last digit of product), the second last digit of the product is the sum of 6 (in the second row of long multiplication and the last digit of 10 expressed in that particular number system. So the base must be 9.

$$\therefore a = 9 \text{ and the given number is 4221}$$

$$= 4(9^3) + 2(9^2) + 2(9) + (1) = 3097$$

Choice (D)

Solutions for questions 17 to 20:

The total number of questions is 185 and Divya attempted a total of 119 questions, and had a net score of 79.

\therefore Of the 119 questions, 89 questions were correct and 30 were wrong.

As it is given that she had integer marks in each section, it is only possible if the number of mistakes is a multiple of three

(as the negative marking is $1/3^{\text{rd}}$), of a mark. (As the maximum number of mistakes is nine, in other sections she made either three or six mistakes.)

As it is given that she had the least net score in the RC section, the net score in other sections is at least 12. \therefore The minimum number of questions she attempted in DI is 24. As she made mistakes in each section, the minimum number of mistakes she made in the Reasoning section is three and so she attempted at least 24 questions in the Reasoning section also.

As her net score in the RC section is 11, the number of questions she attempted would have been one of 15, 19 and so on. Even if we assume that she attempted the minimum possible number of questions in the DI and the Reasoning sections, she can attempt at most $119 - (28 + 25 + 24 + 24) = 18$ questions in the RC section. So the number of attempts in that section is 15 and in one among the DI and RC sections she attempted 27 questions and in the other section she attempted 24 questions.

Assume she attempted 27 questions in the DI section and 24 questions in the Reasoning section. \therefore Her score in the Reasoning section would be $21 - 1/3 \times 3 = 20$ marks. So she scored at least 21 marks in the verbal section. As the marks scored has to be an integer, the only possibility is that she made three mistakes and her score was 24 marks. In this case the number of mistakes she made would be 3 (Verbal) + 3 (RC) + 9 (DI) + 3 (Reasoning) which means she made 12 mistakes in the Quant section and as the number of attempts are only 25, her net score in that section would be less than 11 which is not possible.

\therefore She attempted 27 questions in the Reasoning section and 24 questions in the DI sections. Now, we get two possible combinations, depending on whether her net score was 24 or 20 in the Verbal section. For the two possibilities we know the number of attempts as well as the net score of each of the students. Therefore, the other values can be calculated and tabulated as below.

Possibility (i)

Section	Attempts	Correct Answers	Wrong Answers	Net Score
Verbal	28	25	3	24
RC	15	12	3	11
Quant	25	16	9	13
DI	24	15	9	12
Reasoning	27	21	6	19

Possibility (ii)

Section	Attempts	Correct Answers	Wrong Answers	Net Score
Verbal	28	22	6	20
RC	15	12	3	11
Quant	25	19	6	17
DI	24	15	9	12
Reasoning	27	21	6	19

17. Divya attempted 27 questions in the Reasoning section.
Choice (C)

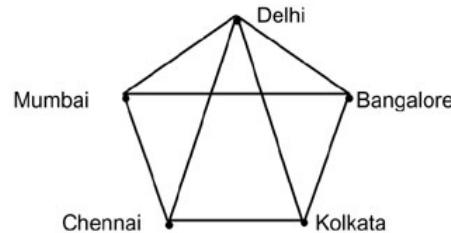
18. In the DI section she answered 15 questions correctly.
Choice (B)

19. In DI section Divya had only 62.5% correct attempts.
Choice (C)

20. It is the second possibility and in this case her net score in the Quant section was 17 marks.
Choice (C)

Solutions for questions 21 to 26:

21. The five cities represented by the vertices of a pentagon and the lines joining them represent super express ways, according to the condition given.

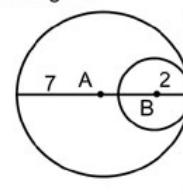


from the figure, the number of express ways required is 8.
Choice (A)

22. Let A(3, 7) and B(-1, 4) be the given centres.

$$\text{Then } AB = \sqrt{(-1-3)^2 + (4-7)^2} = \sqrt{16+9} = 5 \text{ units}$$

$\therefore AB = 5 = 7 - 2$ = difference of the radii of the two circles.
Hence, the circles touch each other internally and have only one common tangent.



Choice (B)

23. 1 2 3 4 5 6 7

The first 3 positions can be filled in 2 ways.

Since the number is even, position seven can be filled with 0, 2, 4, 6 or 8 (in 5 ways.)

Since, the digit 7 has to appear only once, we consider the following cases.

Case (i) : If the first three digits are 242 then one out of the positions 4th, 5th and 6th should be 7 and the remaining two positions can be filled in 9 (9) ways (i.e., with the digits except 7).

\therefore Number of trials in this case

$$= 3 (9) (9) (5)$$

Case (ii) : If the first three digits are 472, then the 4th, 5th and 6th positions can be filled in (9) (9) (9) ways (i.e., with the digits except 7).

\therefore Number of trials in this case

$$= (9) (9) (9) (5)$$

Hence, the required number of trials = (12) (9) (9) (5)
= 4860
Choice (B)

24. By observation we see that

$$16 - 6 = 10, 17 - 7 = 10, \text{ and } 18 - 8 = 10,$$

So, (divisor - remainder) is same in all the cases. N will be = {LCM (16, 17, 18) - 10}

We see that LCM of 16, 17 and 18 is also divisible by 12, and when 10 is subtracted from it, we get 2 as a remainder when divided by 12.

Hence, when N^2 is divided by 12, the remainder = $2^2 = 4$

\therefore When $(N^2 + 5N + 6)$ is divided by 12, the remainder will be $4 + 5(2) + 6 = 20$, i.e., remainder = $20 - 12 = 8$

Choice (C)

25. Given $x, y, z \in \mathbb{R}, y = \log_2(x)$.

$$z = |y|^2 + 3|y| - 10.$$

$$\Rightarrow (|y| + 5)(|y| - 2)$$

As $z \geq 0$, $|y| \leq -5$ and $|y| \geq 2$

$|y| \leq -5$ is not possible.

$$\therefore |y| \geq 2 \Rightarrow y \leq -2 \text{ or } y \geq 2$$

The values of y and the corresponding values of x are tabulated below

y	$-\infty$	-2	2	∞
x	0	$1/4$	4	∞

Alternatively, using the option, if we check for value of x as $x = 2, 64, \frac{1}{4}$, we can eliminate options (A), (B) and (C).
 \therefore The required range of x is $(0, 1/4] \cup [4, \infty)$

Choice (D)

26. One side of the rhombus lies on the line $\ell: y = x - 1$
 The centre (point where the diagonals intersect each other) is the origin.
 \therefore The other side lies on the line which is as far from $(0, 0)$ as ℓ .

This line has also got to be parallel to ℓ .

\therefore The line has to be $m: y = x + 1$. Choice (C)

Solutions for questions 27 to 30:

27. The expenditure on salaries is equal to the profit in the following cases.

Company A – 2004 and 2007

Company B – 2002

Company C – 2004, 2005 and 2007

It happened for at least one company in the years 2002, 2004, 2005 and 2007. Choice (A)

28. From the formula given, the ratio of expenditures

$$= \frac{\text{Ratio of incomes}}{\text{Ratio of (100 + profit%)}}$$

Ratio of expenditure of company A to that of company B is (for different years)

2002	2003	2005	2006	2007
$\frac{149.4}{157.6} \times \frac{130}{120}$	$\frac{173.4}{164.7} \times \frac{125}{125}$	$\frac{227.4}{185.3} \times \frac{140}{125}$	$\frac{223.4}{204.6} \times \frac{145}{135}$	$\frac{241.7}{268.4} \times \frac{150}{140}$

By observation, it will be the highest in 2005.

Choice (B)

29. The ratio of income to expenditure is more than $\frac{5}{4}$ ($= 1.25$)

but less than $\frac{3}{2}$ ($= 1.5$) means profit percentage is more

than 25% but less than 50%, it happened for A in 2004, 2006 and 2007

for B in 2002, 2004, 2005 and 2006

for C in 2002, 2003, 2004, 2005 and 2007

\therefore It happened for at most 4 years for companies A and B.

Choice (C)

30. By observation, the share of salaries in the total expenditure is the highest for each of the three companies. Hence, the expenditure on salaries will be the highest even when all three companies are considered together.

Choice (B)

Difficulty level wise summary - Section I	
Level of Difficulty	Questions
Very Easy	
Easy	2, 6, 8, 30
Medium	3, 5, 7, 9, 10, 11, 12, 13, 14, 15, 16, 21, 22, 23, 24, 25, 26, 27, 28, 29,
Difficult	1, 4
Very Difficult	17, 18, 19, 20

SECTION – II

Solutions for questions 1 to 4:

Number of words and Explanatory notes for RC:

Number of words : 731

1. (A) "state intervention" may be necessary but this is not explicitly stated in the passage. (B) does not mention remedies which are explicitly explored in paras 4, 5 and 6.

(C) is more in line with the exploratory tone of the passage to find solutions. Refer to the last few lines of paras 4, 5 and 6. (D) is convoluted and makes a case for economic growth, and thus loses focus.

Thus, (C) is correct.

Choice (C)

2. Refer to para 2 and the first sentence of para 3 (extermination of big whales lack of integration between the economic system and its natural environment). Conflict between ecology and economy is reflected in (a). (b) is also true from an overall reading of para 2, especially the first sentence. (c) is less objective; and does not mention the environment. (d) condemns capitalism, which is hasty. (e) is a restatement from para 2 but is not specific to the question. Statement (f) is the desired objective or expectation but is not the reason for the question.

Thus, statements (a) and (b) are correct. Choice (B)

3. Refer to the last sentence of para 3. "reckless disregard to the natural environment' discounts (A) and supports (C). (B) and (D) do not refer to the natural environment at all.

Thus, (C) is correct.

Choice (C)

4. Refer to the third sentence of the penultimate paragraph – the economy is restructured in a way that enables it to become aware of the side effects of economic decisions in the environment of the economy. 'self-control' can be best described as pursuing economic goals that takes environmental side-effects into account. (a) is not stated in the passage. (b) is easier said than done. So both (a) and (b) are incorrect. 'as such' as given in the last sentence refers to 'economizing the ecology', so it can mean attaching a monetary value to ecosystems. But the main inference from the last sentence is that, as long as resources are treated as free to access and use, any rational decision maker is bound to use them freely without much concern for the environment. (c) is wishful thinking as the economy and ecology are strongly inter-related. Statement (d) is beyond the scope of the passage. Statement (e) cannot be inferred.

Choice (D)

Solutions for questions 5 and 6:

5. It can be inferred that this paragraph is taken from the middle of the text. On a cursory reading of the sentences in the paragraph, it can be noticed that sentences (a), (c), (d) and (e) speak about process or problems involved and sentence (b) stands alone. There is no precedent for or elaboration of the lightning (discovery, realization etc) that is mentioned in statement (b). So statement (b) is best left at the end of the paragraph, in this case. In the absence of a good opening sentence, we will have to look at individual sentences more closely and their placement with respect to one another. Sentence (c) has a reference to the pronoun 'they' and the reference of this subject is missing from sentences (e), (a) and (d) which throw light on process details. Also sentence (c) has to precede sentence (e). "go on further,..... forward; stagnation is the death of production" given in sentence (c) links with "Already in the works". Already in the works can mean "being prepared; being planned; being done". Sentence (e) is followed by sentence (a) (..... talk, too, of angels,.....). Gods and goddesses were being fashioned out and there was talk of angels, too. Statement (d) follows next with a list of problems. Statement (b) concludes the paragraph indicating that a solution to the problems mentioned in statement (b) has been found. So, ceadb. The other choices disrupt the sequence or thought flow and distort the overall meaning of the paragraph.

Choice (B)

6. From a broad reading of the sentences of the paragraph, one can infer that the paragraph mainly discusses literature and literary lies. If one looks at the choices, then one observes that the introduction sentence can be (d) or (b) or (e). Statement (d) is a better starter than statement (b) as in statement (d), the names of the novel and the novelist are mentioned. Also the general description 'masterpiece of

'decency' has to precede the specific reference 'the need for decency'. Also statement (e) cannot begin the paragraph as it can come only after statement (b). "Literature's main malaise is the disgrace...." as given in statement (b) needs to be described first and then the comparison of the literary malaise to the affliction of a child" as described in statement (e). So statement (d) begins the paragraph and is followed by statement (b). "Masterpiece of art or decency" introduced in statement (d) links with "need for decency" in statement (b). Statement (e) takes the idea of statement (b) forward. A child is shocked and experiences a malaise and similarly a writer is shamed and shocked So, 'fbe'. Statement (c) follows. "Necessary lies to which literary lies do not belong" given in statement (c) links with "inevitable lie that one commits in writing" as given in statement (e). Statement (c) is followed by statement (a) which continues the idea that literature does not lie and literary lies are not necessary lies. The past was free and did not suffer from the embarrassment of literary lies. Today the manifestations are pitiful. So, dbeca. The other choices disrupt the thought flow. Choice (D)

Solution for question 7:

7. The given para talks about the repercussions of justice being denied by any society. Denial of justice leads to terrorism and other extreme forms of violence. Choice B states that in order to prevent this, justice must be made accessible even at the grass roots level. Choices (A) and (C) are mere repetitions of what is stated in the para. 'Rule of the robe' in choice (A) refers to the judiciary. Choice (D) is not in keeping with what is stated in the para.

Choice (B)

Solutions for questions 8 to 12:

Number of words and Explanatory notes for RC:

Number of words : 699

8. Refer to the first sentence of the third paragraph - Recently, the very notion that history is a fact-based discipline has come under scrutiny. Also refer to the eight sentence of the second paragraph - Memory also becomes important for connecting divergent or warring communities to different interpretations, or differing aspects, of a shared past. In the second para, it is also mentioned - History also has a function beyond the remembrance or recollection of, or writing about, our past So the first part of statement (a) is true. From the fourth and fifth sentences of the first paragraph, the second part of (a) can be inferred. The study of history is often characterised as solely concerned with recovering facts Seen in this way, (erroneously....) history is like a book, with each chapter charting a different phase or epoch of human development.....From the last sentence of the second para - But many of its certainties have been challenged in more recent times....and the fourth sentence of the third para - More recently, pressure has been applied to the old certainties of history by philosophers of the discipline....., statement (c) can be inferred. Statement (d) is largely true from the third para - innovative work in sociology, psychology, anthropology and many other disciplines has been brought to bear on the practice of history (third sentence) anddecided shift, towards new perspectives (and not just factual orientation) in historical writing, (third last sentence) andmethodological implications of new discourses.....(last sentence). Statement (e) finds no mention in the para. Long term or short term predictions are not discussed. Statement (f) contradicts the last sentence of para 1. Also refer to the last but two sentences of the second paragraph – From its sense of continuity, history offers apparent form and purpose to past, present and future. Statement (b) is out of scope. Choice (D)

9. (A) is not true. The passage merely states that history is more receptive to social science. (B) is true as marginal groups have now become the focus of historical research.

Refer to para 3 – 4th sentence onwards. "Systematic development of areas of historical inquiry which might have once seemed marginal (C) is a voice from the past. (D) is too radical for an expository passage of this kind. The correct answer is (B) Choice (B)

10. (A) would be jumping to conclusions. (B) is an afterthought. (C) is true "pressure has been applied to the old certainties of history" as stated in the fourth sentence of the last paragraph and "new perspectives in historical writing" as given in the fourth last sentence of the passage. (D) is too certain for the contemplative paragraph.

The correct answer is (C). Choice (C)

11. Statement (a) is out of scope. Statement (b) cannot be inferred from the third last and penultimate sentences of the passage. The author's intention in the book Studying History has been mentioned. But those lines in the passage could also be relevant to a critique or review of a book, they could also appear in an article making a comparative assessment of books. So (b) is not true. With respect to statement (c), the author implies that a historian would be subjective while writing about history. Refer to the views in the third para - Although factually orientated political history has never gone away (not that it should do so), historians today are much more receptive to the theories of social science. So statement (c) is not true. The first four aspects or characteristics of history as given in statement (d) are mentioned in para 2 and the last aspect (marginal) is discussed in para 3. Statement (d) is true. Statement (e) is out of scope. Statement (f) is true from the second sentence of the passage.

Choice (A)

12. Choice B is incorrect. The passage or the ideas given in the question do not imply that isolated islands provide great opportunities for natural experiments. Also it has been mentioned in the passage that historians today are much more receptive to the theories of social science as that may give them new perspectives in historical writing. So the agenda set for the historians in choice C becomes wrong. Choice D is the best choice. It has been mentioned in the last para that history has grown as a social science. It is a fictional enterprise created in the mind of the historian. Other disciplines like sociology and anthropology have been brought to bear on the practice of history. Previously marginal, historical inquiry areas (class, gender, culture, custom...) have shown systematic development. So a historian can now look at the confounding effects of natural variation in additional variables besides the one of interest (natural experiments) by shifting his focus to the arena of isolated islands which provide the said advantages in helping his writing and analysis reach a new realm. He is, anyways, looking beyond the official government-type documents which fuelled most nineteenth-century scholarship. Choice A is out of scope.

Choice (D)

Solution for question 13:

13. For the first blank, 'Quality' is most apt in the context of the passage. It refers to the value, eminence; trait, attribute. Essence is the spirit, nature, substance of a particular thing. Essence collocates with 'of' and hence cannot be the right option. Incarnation – embodiment personification, manifestation. It cannot be renounced. Encumbrance – burden, responsibility. To renounce freedom does not amount to giving up one's responsibility.

For the second blank, if someone's freedom is taken away, there is no possible compensation, as freedom is integral and essential to human existence. Justification for something is an acceptable reason or explanation for it. It does not fit into the sentence as it will not complete it. Compunction is uneasiness; regret; guilt. Bondage is enslavement, oppression. There is bondage, when one's freedom is taken away. Hence, **compensation** is the right word in the context.

For the third blank, 'Incompatible' is the right word. such a renunciation does not suit man's nature; it is inharmonious; clashing. Inexorable –unstoppable, inevitable. It is not used with 'with' and does not fit into the context. Incongruous – inappropriate. It is not used with 'with' and hence is ruled out. Inchoate – something which is inchoate is recent or new, and vague or not yet properly developed.

For the fourth blank, 'To stipulate' is to specify, lay down, impose. It goes into the given blank as what follows gives the stipulation. To 'delegate' duties, responsibilities or power to someone is to give them those, so that they can act on your part. 'Delegate' collocates with 'to'. To 'harbour' is to shield, protect; foster. To 'endorse' is to support, subscribe to.

For the fifth blank, 'Vain' is the right word as it says what such a convention would be. It means – unsuccessful and useless; unproductive Subversive – trying or likely to destroy a government or political system by attacking it secretly or indirectly. Invaluable – extremely useful. Antiethical – opposed; contrasting or contradictory. It cannot fill the blank as it would be repetitive.

All the words are given correctly in choice (B).

Choice (B)

Solution for question 14:

14. In part (a), the words 'thanksgiving' and 'christmas' should be capitalized. Also 'straddles across' is incorrect. It should be 'straddles the mighty Colorado river.' In part (b), 'considered as' is incorrect. It should read 'Considered (to be) the world's largest dam.....' Also, 1930's is incorrect. It should read 1930s (no apostrophe). There are several errors in part (c). The words 'bureau' and 'reclamation' should be capitalized. Also, the part should have 'offered tours of' and not 'offered tours for'. The word 'million' should be preceded by the indefinite article 'a'. The verb 'intrigued' is common to both parts of the sentence and should precede the correlative conjunction 'not only'. There is also a tense error. The present tense is prevalent throughout the paragraph. So the use of the past perfect 'had been' is incorrect towards the end of part (c). Hence the part (c) should read '..... The Bureau of Reclamation has offered tours of this National Historic Landmark since 1937. Today, the dam draws nearly a million visitors every year. Tourists are intrigued not only.... Part (d) is grammatically correct. In part (e), 'modernist-style' is a particular type of style and so the word 'modernist' should be capitalized. Also the words 'commemorating' and 'concrete' are incorrectly spelt. There is also a punctuation error. The word 'however' should also have a comma placed before it.

Choice (C)

Solution for question 15:

15. The usage of the word 'let' is incorrect in choice A. The idiom should be 'letting himself in for'. Other sentences are correct. In choice B, 'let the cat out of the bag' means 'reveal a secret'. In choice C, 'letting on' means 'pretending or making believe'. In choice D, 'let up on' is a phrasal verb which means 'to become more lenient with' or 'to reduce the pressure on.'

Choice (A)

Solutions for questions 16 to 19:

Number of words and Explanatory notes for RC:

Number of words : 684

16. The 20th century began with colonization and ended it with, supposedly, liberal capitalism - both Western ideologies. (A) refers to 'empire' which is true only at the beginning (B) mentions Asia, while the passage refers to "the (poor) Rest" (C) mentions colonization at the end, which is not true. (D) mentions the hegemony of the West (in the form of colonization or capitalism) in the subaltern world.
Thus (D) is correct.

Choice (D)

17. The author mentions the "new configuration of forces" which challenge imperialist narratives. So the United States is mentioned to maintain that Western colonials are not so supreme in world affairs as they once were. So statement (a) is incorrect. Also statement 'c' is incorrect. 'it' refers to the International economic order. Statement 'd' cannot be inferred. Refer to the second sentence of the first para (...until one Asian nation, Japan, joins the action....). But saying that Japan joined the ranks of capitalist economies doesn't translate to 'rupture'. Statement (e) is incorrect. China followed liberal capitalism as an apt pupil. Statement (b) is out of scope.

Choice (A)

18. In the last sentence of the passage, it is given that Giuliano Garavini maintains that the 'third world' worked towards gaining a foothold in world trade and the Europeans did their best to help them, and one of his contributory reasons is the fact that the US lost ground as a trade power following the establishment of UNCTAD in 1964. Earlier in the passage, in the last sentence of the first paragraph, it has again been mentioned that the United States reconceived its mission in the world and new nations were no longer willing to support it on the same terms. So an argument that asserts the growing supremacy of the United States on the world stage will weaken the view mentioned at the end of the passage. Only, choice (A) does this. Choices (C) and (D) strengthen the argument. Choice (B) is not relevant to the argument since it does not present trade or economics related issues.

Choice (A)

19. Choice A is not stated. It has only been mentioned in para 1 that the forces of liberal capitalism are as dominant as ever. Also refer to the sixth and seventh sentence of para 1 – The temptation to see Western colonials still lording it over hapless subalternsBut this perspective passes over the major structural changes in the history of the postwar decades. The imagery of empire is also used – The twentieth century begins and ends with imperialism China is the apt pupil of Western rapacity. This idea is echoed in the last para too – From the same quarters that gave rise to the New International Economic Order.....their own structural adjustment programs. Choice C is premature. Choice D is not the point.

Choice (B)

Solution for question 20:

20. The paragraph speaks about why we must not justify our mistakes. Choice (B) concludes the para by saying that justifying our actions precludes learning from the mistake. Choice (A) does not gel with the passage. The penultimate sentence speaks about the disadvantage of justification. The para is not about the reasons for making mistakes. Choices (C) and (D) digress.

Choice (B)

Solution for question 21:

21. Choice (A) is good restatement as it captures the idea with all its angles.
Choice (B) is too vague with no reference to the reasons for the mentioned difference.
Human behaviour being regulated for the common good is not mentioned in choice (C). The first para of choice (D) is moralistic in tone while the word 'unrestricted' rules out the second part of choice (D).

Choice (A)

Solutions for questions 22 and 23:

22. As none of the persons is a Haralal, Gabbar Singh could not have worn a red or green shirt. If Gabbar had worn a red shirt, then Amar could not have made such a statement. If Gabbar had worn a green shirt, then Anthony could not have made such a statement.
 \therefore Gabbar should have worn a yellow shirt.

Choice (B)

23. As both are saying Feroz is wearing a red hat, both must belong to same type.
 As Dhiraj is saying that Feroz is wearing a yellow shirt and Suraj is saying that Feroz is wearing a green shirt, both of them cannot belong to same type, which is a contradiction.
 ∴ Such a conversation is not possible. Choice (D)

Solutions for questions 24 and 25:

Given, Veeru always tells the truth.

(1) Jai is a Lalpila. i.e. he mistakes red as yellow and as he is saying that Phoolan is wearing a yellow saree, we can say that Phoolan is not wearing a red saree. She is wearing a saree of yellow or green or some other colour. As Jai says that Veeru is a Haralal, Veeru cannot be Haralal. He can be either a Lalpila or a Pilhara. He cannot be a Lalpila, as if he was a Lalpila, then the saree must be of red colour, which is a contradiction.
 (2) Veeru is a Pilhara and the saree is of green colour.

24. Choice (B)

25. Choice (A)

Solutions for questions 26 to 29:

The total number of votes for A → 900; B → 900; C → 950; D → 850

As it is known that among the people less than 18 years age group, Mother India secured the least number of votes, Mother India is either B or D. As the difference between the total number of votes secured by DDLJ and Lagaan is 50. This difference is possible between

- (1) A and C
- (2) B and C and D
- (3) A and D

The possible cases are:

1(a)	(b)
A – DDLJ C – Lagaan B/D – Mother India D/B – Sholay	C – DDLJ A – Lagaan B/D – Mother India D/B – Sholay
2(a)	(b)
B – DDLJ C – Lagaan D – Mother India A – Sholay	C – DDLJ B – Lagaan D – Mother India A – Sholay
3(a)	(b)
D – DDLJ A – Lagaan B – Mother India C – Sholay	A – DDLJ D – Lagaan B – Mother India C – Sholay

These above cases can be tabulated as below.

Case	Movie			
	DDLJ	Lagaan	MI	Sholay
1(a)	A	C	B/D	D/B
1(b)	C	A	B/D	D/B
2(a)	B	C	D	A
2(b)	C	B	D	A
3(a)	D	A	B	C
3(b)	A	D	B	C

MI: Mother India

26. If Sholay was A, then case 2(a) or 2(b) follows.
 ∴ Mother India definitely received the least number of votes, but DDLJ may or may not have got the highest number of votes.
 Choice (B)

27. The movie C got the highest number of votes in total. From the table above, DDLJ or Lagaan can be C in any of the cases 1(a), 1(b), 2(a) or 2(b).

Choice (A):

D received the least number of votes in total, but from the possible cases, it is not possible to conclude whether D is Sholay or not.

Choice (B):

From the question table, A received the least number of votes among the people of the age group 31 – 45. From the possible cases, it is not possible to conclude whether A is Sholay or not.

Choice (C):

A received its least number of votes from the people of the age group 18 – 30. From the possible cases, it is not possible to conclude whether A is Mother India or not.
 Hence none of the given statements is definitely true.

Choice (D)

28. Since the difference of the total votes is the highest between C and D, DDLJ and MI have to be C and D (in any order). From the above table, the possible cases are:

One case of 1(b) → DDLJ – C, Lagaan – A, MI – D, Sholay – B and case 2(b) → DDLJ – C, Lagaan – B, MI – D, Sholay – A
 For case 1(b), only statements (c) and (e) are simultaneously true i.e., 2 statements.

For case 2(b), only statement (c), (d) and (e) are true.
 Hence at least 2 statements are simultaneously true.

Choice (C)

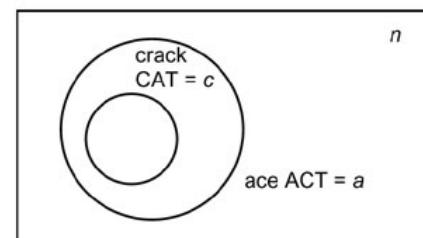
29. If statements (a) and (b) are true, the case that is possible is case 2(b). But in this case, statements (c), (d) and (e) cannot be true.

However if (a) is true and (b) is false, the all four statements (a), (c), (d) and (e) can be true for the case 3(b).
 Hence at most four statements can be true simultaneously.

Choice (D)

Solution for question 30:

30. From the main statement, the following representation is possible.



Let n be the total number of students and let c students be able to crack the CAT and a students be able ace the ACT. We need to find $a - c$.

Using I alone : $a = 23$, but we still cannot find c .

∴ I alone is not sufficient.

Using II alone : $c + (n - a) = 35$

$$\Rightarrow c + 42 - a = 35 \quad (\because n = 42, \text{ is given})$$

$$\Rightarrow a - c = 7$$

∴ II alone is sufficient.

Choice (B)

Difficulty level wise summary - Section II	
Level of Difficulty	Questions
Very Easy	-
Easy	10, 30
Medium	1, 2, 3, 7, 8, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 26, 27,
Difficult	4, 9, 15, 22, 23, 24, 25, 28, 29
Very Difficult	5, 6,