

Ref: AIMCAT1304

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 8: Answer the questions independently of each other.

1. Pradeep wants to take a loan of ₹10,00,000 to buy a house. He approached two banks, A and B, for the loan. Both banks agreed to give the loan but at different terms. Bank A charges interest at 20% per annum, compounded annually, while bank B charges simple interest at 25% per annum. If Pradeep wants to repay the loan in a single payment at the end of n years, find the maximum value of n for which Bank A is a better preference for Pradeep when compared to Bank B.
(A) 2 (B) 3 (C) 4 (D) 5
2. The number a is the least number which is exactly divisible by each of 2, 4, 5, 10 and 20, while the number b is the greatest number that exactly divides each of 12, 60, 75 and 90. If a number N has $a \times b$ factors, including 1 and itself, then the maximum number of distinct prime factors that the number N can have is
(A) 5 (B) 6 (C) 3 (D) 4
3. Two lines, represented in the $x-y$ plane by $3x + 2y + 6 = 0$ and $2x - 3y + 17 = 0$, meet at the point A. If B and C are two points, on the first and the second lines respectively, such that $CA > 10$ and the line BC passes through the point P(2, 7), then the equation of the line BC can be
(A) $5x - y + 3 = 0$ (B) $5x - y - 3 = 0$
(C) $3x + 5y - 41 = 0$ (D) $2x - 3y + 17 = 0$
4. In running a student hostel, I incur two types of expenses – fixed expenses, which are independent of the number of students, and variable expenses, which vary directly as the number of students. In one of the months, the number of students increased by 10% and, as the price of many other commodities went up, the variable expenses per student increased by 20%, while the total fixed expenses increased by 28%. Which of the following could be the percentage increase in the total expenditure incurred in running the hostel?
(A) 27% (B) 30% (C) 33% (D) 25%
5. A boat moves at a speed of 12 kmph in still water. It has to travel a distance of 60 km downstream from P to Q. The moment the boat reached a point R, between P and Q, the speed of the current suddenly doubled. If as a result, the boat reached its destination half an hour earlier than it normally would have, what is the speed of the stream?
(A) 4 kmph
(B) 6 kmph
(C) 3 kmph
(D) Cannot be determined
6. Find the quadratic equation whose roots are twice the roots of the quadratic equation $4x^2 - 16x + 15 = 0$.
(A) $16x^2 - 32x - 15 = 0$ (B) $8x^2 - 32x + 15 = 0$
(C) $4x^2 + 32x - 15 = 0$ (D) $x^2 - 8x + 15 = 0$
7. In a container containing a solution of milk and water, the ratio of milk and water is 3 : 2. Now, 10 litres of water is added to this solution and the ratio becomes 2 : 3. Find the final quantity of the solution in the container.
(A) 20 litres (B) 25 litres
(C) 30 litres (D) 40 litres
8. Find the value of $\log_{\sqrt{2}} 16\sqrt{2} + \log_{\sqrt[3]{2}} 32\sqrt{32}$
(A) 40.5 (B) 20.5 (C) 3.625 (D) 55.5

DIRECTIONS for questions 9 to 11: Answer the questions on the basis of the information given below.

In 1989-90, the production of the Primary, Secondary and Tertiary sectors contributed 50%, 30% and 20% respectively to the GDP of an economy. For the next three years, the production of the Primary, Secondary and Tertiary sectors grew at the respective rates of 10%, 20% and 40% per annum, compounded annually.

Note: GDP of an economy = Sum of the productions of the Primary, Secondary and Tertiary sectors.

9. The percentage increase in the GDP of the economy from 1989-90 to 1991-92 is
(A) 42.9% (B) 41.61%
(C) 38% (D) None of these

10. The share of the Tertiary sector in the GDP of the economy in 1990-91 is nearest to
 (A) 28% (B) 26.5% (C) 25% (D) 23.5%
11. The increase in the production of the Secondary sector from 1989-90 to 1992-93 is approximately what percentage of the increase in the production of the Primary sector over the same period?
 (A) 78% (B) 132%
 (C) 102% (D) Cannot be determined

DIRECTIONS for question 12: The question is followed by two statements 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 one of the statements alone, but cannot be answered by using the other statement alone.
- Choose (B) if the question can be answered by using either statement alone.
- Choose (C) if the question can be answered by using both statements together, but cannot be answered by using either statement alone.
- Choose (D) if the question cannot be answered even by using both the statements together.

12. If the cost of an apple is more than that of an orange, is the cost of an orange more than that of a guava?
- The cost of 3 apples and 2 oranges is more than that of 5 guavas.
 - The cost of 3 apples and 5 guavas is less than that of 8 oranges.

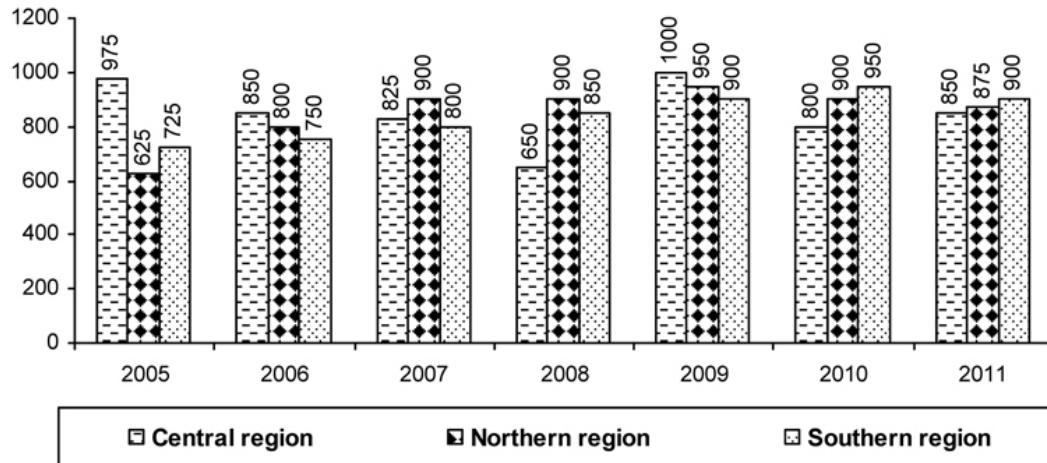
DIRECTIONS for questions 13 to 17: Answer the questions independently of each other.

13. There is a compound wall along the perimeter of a rectangular plot. Two walls of the plot run North-South and two walls run East-West. A man is standing x feet to the north of the center of the north wall. A second man starts walking eastwards from

DIRECTIONS for questions 18 to 20: Answer the questions on the basis of the information given below.

The farmers of a region cultivate a crop in any given year, only if the average rainfall over the preceding three years is more than the crop water need of that crop.

The following graph gives the annual amount of rainfall received (in mm) in three regions – Central, Northern and Southern – of a country, from 2005 to 2011.



The following table gives the crop water need for different crops.

Crop	Crop Water Need (in mm)
Citrus	950
Cotton	900
Ground Nut	600
Maize	650
Soybean	575
Sunflower	800
Bajra	500

18. In how many years from 2008 to 2012, can cotton be cultivated in the Northern region?
 (A) 2 (B) 3 (C) 4 (D) 5
19. Which region received the lowest amount of rainfall from 2007 to 2011?
 (A) Central
 (B) Northern
 (C) Southern
 (D) Both Central and Northern
20. In 2010, which of the following crops cannot be cultivated in the Southern region?
 (A) Only Citrus
 (B) Only Citrus and Cotton
 (C) Only Citrus, Cotton and Sunflower
 (D) All except Bajra, Soybean and Ground Nut.

DIRECTIONS for questions 21 to 27: Answer the questions independently of each other.

21. $\sqrt{28 - 16\sqrt{3}} + \sqrt{28 + 16\sqrt{3}} =$
 (A) 8 (B) 16 (C) 32 (D) 4

DIRECTIONS for questions 28 to 30: Answer the questions on the basis of the information given below.

The following table gives the pattern of electricity consumption for different sectors from 1999-2000 to 2004-05.

Pattern of Electricity Consumption (As a percentage of total production)

Year	Domestic	Commercial	Industry	Traction	Agriculture	Others
1999-2000	22	6	34	2	32	4
2000-01	24	8	32	3	30	3
2001-02	25	7	35	1	27	5
2002-03	24	6	28	4	35	3
2003-04	25	5	36	2	24	8
2004-05	25	8	34	3	25	5

28. For which of the following sectors is the percentage increase in consumption from 1999-2000 to 2004-05 the highest, provided the production in 2004-05 is the highest among the given years?
 (A) Domestic (B) Industry
 (C) Traction (D) Cannot be determined
29. Which of the following statements is not definitely true?
 (A) Over the given period, the amount of electricity consumed by the Commercial sector is less than 25% of the electricity consumed by the Industry sector.
 (B) For any year, the amount of electricity consumed by the Commercial sector is more

than the amount of electricity consumed by the Traction sector.

- (C) For all the years put together, the amount of electricity consumed is the highest for the Industry sector.
 (D) If over the given period, the amount of electricity consumed by the Traction sector is more than the electricity consumed by the 'Others' sector, then the Commercial sector consumed more electricity than the 'Others' sector over the given period.

30. Over the given period, which of the following sectors consumed the lowest amount of electricity?
 (A) Commercial (B) Traction
 (C) Others (D) Cannot be determined

SECTION – II

Number of Questions = 30

DIRECTIONS for questions 1 to 3: Answer the questions on the basis of the information given below.

Seven portfolios – Home Affairs, Finance, External Affairs, Power, Agriculture, Petroleum and HRD – were allotted to five ministers – A, B, C, D and E – with each minister being allotted at least one portfolio and no portfolio being allotted to more than one minister.

Further it is known that,

- (i) E, the minister of Finance, is also the minister of either HRD or Agriculture.
- (ii) A is neither the minister of Home Affairs nor of Power, and he holds only one portfolio.
- (iii) the minister of Petroleum is also the minister of Agriculture, while B and C have only one portfolio each.
- (iv) Either D or E is the minister of HRD.

1. The portfolios of how many ministers can be determined with the given information?

- (A) 0 (B) 1 (C) 2 (D) 4

2. Which of the following statements is definitely true?

- (A) B is the minister of Power, if D is the minister of HRD.
- (B) C is the minister of Home Affairs, if A is the minister of External Affairs.
- (C) E is the minister of Petroleum, if D is the minister of HRD.
- (D) D is the minister of Agriculture, if A is the minister of External Affairs.

3. Which of the following statements will help determine the portfolios of all the five ministers?

- (A) D is not the minister of External Affairs and C is not the minister of Home Affairs.
- (B) D is not the minister of Agriculture and E is the minister of HRD.
- (C) C is the minister of Power and D is not the minister of Home Affairs.
- (D) B is not the minister of Home Affairs and D is not the minister of HRD.

DIRECTIONS for questions 4 and 5: In each question, there are five sentences or parts of sentences that form a paragraph. Identify the sentence(s) or part(s) of sentence(s) that is/are correct in terms of spelling, punctuation, grammar and usage. Then, choose the **most appropriate** option.

4. (a) Asian-Americans, whether born in the United States or abroad, still make up mere 6% of the country's population.

- (b) They are a mixed lot, ethically and culturally: the largest sub-group, the Chinese, make up
- (c) less than a quarter of the total Asian-American population. But in 2010, according to a recent
- (d) report from the Pew Research Centre that counts both authorised and unauthorised migrants,
- (e) Asians are America's biggest migrant group. That year 430,000 Asians arrived, compared with 390,000 Hispanics.

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

- 5. (a) Over the years, economists have deployed all sort of mental gymnastics in their search for
- (b) a model that can forecast reliably Olympic winners. Initial expectations that medal tallies
- (c) would be closely correlated with the population and per-capita wealth of a country was soon dashed.
- (d) The models leapt the hurdle of statistical significance only when a third variable was added –
- (e) how many medals the country won last time – but this did not add much by way of explanation.

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

DIRECTIONS for questions 6 and 7: Each of the following questions 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.

6. In 1998 Pope John Paul II visited Cuba, prompting outsiders to await a political opening of the kind that brought down communism in his native Poland. Sadly, even two decades after the fall of the Berlin Wall, Cuba remains one of the handful of countries around the world where communism lives on. Illness forced Fidel Castro to step down in 2006, but his slightly younger brother, Raúl, is in charge, flanked by a cohort of elderly Stalinists.

(A) Sceptics will note that Fidel Castro opened up the island's economy a little in the early 1990s, after the collapse of the Soviet Union and the withdrawal of its subsidies, only to stop when he found a new benefactor in Venezuela's Hugo Chávez.

(B) No active dissent in one-party rule is allowed: dozens of opponents of the regime are arrested ahead of any dignitary's visit.

(C) When a pope next visits the island, expectations will be more muted.

(D) Yet a momentous change has begun in Cuba in the meantime: The country has started on the road towards capitalism; and that will have big implications for the United States and the rest of Latin America.

7. Paying tax always hurts. But America's tax code seems designed to make it hurt as much as possible. It contains 3.8 million words, and was changed 579 times in 2010 alone. Taxpayers must wade through a swamp of gobbledegook: tax compliance consumes 6.1 billion man-hours annually, according to the Internal Revenue Service (IRS). That's the equivalent of 3 million people working full-time, year-round – more than the entire federal workforce. Each year, Joe Taxpayer must sign a thick return that he cannot possibly understand.

(A) Tax advisers and preparers benefit handsomely from politicians' addiction to loopholes and unclear English.

(B) And woe betide him if any of its contents should turn out to be inaccurate.

(C) The IRS's National Taxpayer Advocate begs Congress every year to simplify tax but it never will, so most taxpayers hire a guide.

(D) Of the 140 million individuals and families who file tax returns each year in America, 60% pay someone else to fill out forms for them.

DIRECTIONS for questions 8 and 9: The sentences given in each of the following questions, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a letter. From among the four choices given below each question, choose the most logical order of sentences that constructs a coherent paragraph.

8. (a) The infinitely varied and complex doings of a society – any society – would come to a halt if people did not trust other people most of the time – trust them to observe custom, follow the rules, and behave with some predictability.
(b) Countless circumstances operate to diminish trust, but one may be sure that if the society is functioning at all, some degree of trust survives.
(c) The first requirement is that they have the capacity to inspire trust in themselves, they must work to raise the level of trust.
(d) Leaders can do much to preserve the necessary level of trust.
(e) Much depends on the general level of trust in an organization or society.
(A) bdcae (B) eabdc (C) dceab (D) decba
9. (a) Democracy tends to emphasize this expertise at the expense of the expertise that is necessary to properly-governed societies.
(b) In a democracy, he argues, those who are expert at winning elections, and nothing else, will eventually dominate democratic politics.
(c) Not all instrumental arguments favour democracy.
(d) The reason for this is that most people do not have the kinds of talents that enable them to think well about the difficult issues that politics involves.
(e) Plato (Republic, Book VI) argues that democracy is inferior to various forms of monarchy, aristocracy and even oligarchy on the grounds that democracy tends to undermine the expertise necessary to properly-governed societies.
(A) ebadc (B) eabcd (C) eadbc (D) cebad

DIRECTIONS for questions 10 and 11: There are two blanks in each of the following sentences. From the pairs of words given below each sentence, choose the pair that fills the blanks most appropriately.

10. Fossil fuels are part of the natural capital which we steadfastly insist on treating as _____ and if we _____ our fossil fuels, we threaten civilization itself.
(A) entitlement . . . exhaust
(B) expendable . . . squander
(C) exchangeable . . . deprave
(D) dispensable . . . depreciate
11. In a complete _____ from the production sharing contracts (PSCs) signed between oil companies and the government, most oil companies are lending new _____ and interpretations to clauses regularly.
(A) reversal . . . explanations
(B) digression . . . tweaks
(C) departure . . . nuances
(D) spin-off . . . styles

DIRECTIONS for questions 12 to 14: Answer the questions independently of each other.

12. A person works on all the days of a month except on the 1st, 3rd and 5th (if there are any) Saturdays and Sundays of the month. On how many days does the person work in the month of October of a certain year, if 1st January of that year is a Friday?
(A) 25
(B) 26
(C) 27
(D) Cannot be determined
13. Five people – P, Q, R, S, T – are standing in a line. P is taller than R but shorter than T, who, in turn, is taller than S. If Q is shorter than S, who, in turn, is shorter than R, who is the third tallest among the five?
(A) P (B) Q (C) R (D) S
14. A 9 cm × 9 cm × 9 cm cube is completely cut into 3 cm × 3 cm × 3 cm cubes and all the faces of these small cubes are painted in Green. Now each of the small cubes is completely cut into unit cubes, i.e., 1 cm × 1 cm × 1 cm cubes. How many unit cubes in all have at least one face painted?
(A) 729 (B) 162 (C) 27 (D) 702

DIRECTIONS for questions 15 and 16: In the following question, the word in capitals is used in four different ways, A to D. Choose the option in which the usage of the word is INCORRECT or INAPPROPRIATE.

15. GRILL
(A) The grill was placed over the fire to warm the kebabs.
(B) The restaurant downtown that specializes in grilled food does roaring business.
(C) They grilled him all night long but got nothing out of him.
(D) You can grill the pies on the barbecue outdoors.
16. IDEA
(A) It would be a bad idea to go on a vacation at this time of the year.
(B) I don't see the idea of talking to him about the matter as he doesn't want to change.
(C) The synopsis should give you a good idea of the research and what it seeks to study.
(D) Most people have strange ideas of God and do not realize that three-fourths of religion is character.

DIRECTIONS for question 17: The following question presents four statements, of which three, when placed in appropriate order, would form a contextually complete paragraph. Pick the statement that is not part of that context.

17. (A) A transmitter that fits in a suitcase and broadcasts for a kilometer or a mile may cost as little \$2,000.
(B) Another change is the advent of the wind-up radio, which is powered by a hand crank and so needs no batteries.
(C) The necessary equipment is also much less bulky, and can be operated without an engineer on call.
(D) To set up a basic radio station now costs half as much as a decade ago.

DIRECTIONS for questions 18 to 27: Read the following passages and answer the questions that follow them.

Passage – I

In the 'Staying Alive' narrative Cave opens with the quest of the First Emperor of China to find the elixir of life but soon lands us in the 21st century where Tran-humanists aim to use modern science to finally achieve the goal of perpetual youthful life. He notes that in the last century, humans have in fact doubled average human life expectancy.

Why not simply repair the damage caused by aging, thus defeating physical death? This is the goal of Tran humanists, like theoretical biogerontologist Aubrey Grey who has devised the Strategies for Engineered Negligible Senescence (SENS) program. SENS technologies would include genetic interventions to rejuvenate cells, stem cell transplants to replace aged organs and tissues, and nano machines to patrol our bodies to prevent infections and kill nascent cancers. Ultimately, Cave cannot argue that these life extension technologies will not work for individuals but suggests that they would produce problems like overpopulation and environmental collapse that would eventually subvert them.

'Resurrection' is his next immortality narrative. Of course, the most prevalent resurrection story is that of Jesus of Nazareth 2,000 years ago. The New Testament explicitly states that one day every individual will once again live in his or her real but improved physical bodies. Physical resurrection is also the orthodox belief of the other two Abrahamic religions, Judaism and Islam. Thus, Cave notes, half of the world's population officially believes in the future resurrection of their physical bodies. He adds, however, that many Christians, Jews, and Muslims actually subscribe to another immortality narrative, Soul.

The most popular immortality narrative is 'Soul'. Most Christians now believe that their souls, which persist after death, will be reunited with their resurrected bodies. Souls thus solve a lot of the identity problems as associated with the earlier Resurrection narrative. Cave argues that Soul narrative resolves the Mortality Paradox by denying "that the failing body is the true self, identifying the person instead with exactly that mental life that seems so inextinguishable". In Christianity all souls are equal before God, so if the omnipotent and omniscient Creator of the universe is interested in your life then who are your politicians to ignore your desires?

The final immortality narrative is 'Legacy'. It comes in two varieties: fame and progeny. Achieving fame and glory in the here and now have some obvious benefits, e.g. increased status, more money, more power, and more opportunities to mate. In addition, fame means that you will be remembered by later generations. Cave considers the bundle theory of the self in which bits and pieces of our memories, personality and images continue to exist in the cultural realm after our death. But you are still dead, your consciousness and personality is not dispersed into books, movies, or the minds of fans. And research shows that it takes only 70 years after our deaths before most of us are forgotten. Can you name all of your great grandparents?

People also want to live on through their children. Your genes live on through your children, but genes are simply machines for making proteins in response to environmental cues. You are merely the disposable container that genes use to make more copies of themselves. Reproduction, as satisfying as most people find it, is no way to preserve one's individual consciousness.

Cave concludes, "All four fundamental immortality narratives are illusions. None of them will enable us to live forever." But even if one of the immortality narratives were true or possible, Cave argues that on the one hand, boredom and apathy would eventually set in after one has done and seen everything, and on the other hand, the prospect of an infinite future means that there is no urgency to do or see anything, resulting in paralysis.

Passage – II

Banks have taken a uniquely brutal pummeling of late, but they are not alone in having to write down overvalued assets accumulated in the boom. Financial and non financial firms alike face a reckoning on “goodwill” amassed during the long merger wave.

Goodwill is an intangible asset that represents the extra value ascribed to a company by virtue of its brand and reputation. When one firm buys another, the target's goodwill – essentially the premium paid over its book value – is added to the combined entity's balance sheet.

As the economy deteriorates and more firms trade down towards (or even below) their book value, empire builders are having to mark down the value of assets they splashed out on in rosier times.

Investors have so far paid little attention to intangibles, but as write-downs proliferate they are likely to become increasingly wary of industries with a high ratio of goodwill to assets, such as health care, consumer goods and telecoms.

American firms used to be allowed to amortise goodwill over many years. Since 2002, when an accounting rule change ended that practice, goodwill has had to be tested every year for impairment. In this stormy environment, with auditors keener than ever to avoid being seen to go easy on clients, companies are being told to mark down assets if there is any doubt about their value.

Such hits can also sap investor confidence less directly, by raising awkward questions about managers' competence. If overpaying hugely for a rival does not count as inept, then what does?

22. Which one of the following most accurately expresses the main point of the passage?
- (A) A firm that buys another must value assets according to what's presented in its balance sheet.
 - (B) The cost of paying too much for a competitor on account of goodwill has been called into question.
 - (C) Goodwill is the intangible reputation a firm enjoys with its clients.
 - (D) There is a huge difference between the purchase price of an asset and its fair value.
23. Which of the following statements, according to the author, are true?
- (a) Managers who overvalue an asset may be considered incompetent by investors.
- (b) The merger wave is not a contemporary phenomenon.
- (c) Acquired assets may have been overrated in the past.
- (d) Auditing standards in the past may have been perceived as lax.
- (A) a (B) a and b
 - (C) b, c and d (D) a, b, c and d
24. It can be inferred that, according to the author, industries with a high ratio of goodwill to assets are
- (A) more often than not, service based.
 - (B) those that have applied suspicious accounting methods.
 - (C) those that may present an inflated assets situation.
 - (D) soft targets for companies in buying mode.

Passage – III

Matches and even salt were in short supply as the Soviet empire's planned economies collapsed two decades ago. But blame was plentiful then and now. Millions of people – chiefly men in late middle age – died earlier than their counterparts in other countries. That drop, of fully five years in male life expectancy between 1991 and 1994, demands explanation. A newly published article in a British medical journal that in recent years has used epidemiological analysis to examine political and social equations, argues that the clear culprit was mass privatization (distributing vouchers that could be swapped for shares in state owned enterprises). A statistical analysis, it says, shows that this element of the economic reform package, nicknamed “shock therapy”, clearly correlates with higher mortality rates.

That was a shocking failure. It argues that advocates of free market economies ignored the human costs of the policies they were promoting. These included unemployment and human misery, leading to early death. In effect, mass privatization was mass murder. Had Russia adopted more gradual reforms, those lives would have been saved.

In fact the blame game must start at the beginning. Why was the Soviet economy in ruins by 1991? Partly because planned economies don't work (blame Lenin and Stalin for that). Partly because the gerontocratic leadership of Leonid Brezhnev failed to start reforms in the early 1970s, when gradualism might have had a chance of succeeding. By the time Mikhail Gorbachev initiated perestroika and glasnost in the late 1980s, the Soviet Union was all but bust. Worse, by running the printing presses red hot, his government created a colossal monetary overhang. Russians may have thought that their savings evaporated when prices were liberalized at the start of 1992; in truth, their cash was already worthless.

The second question is the effect of all this on mortality. Soviet public health statistics show a clear decline from 1965 to the early 1980s with rising deaths from circulatory diseases (because of poor diet, smoking and, especially, drinking). Mr. Gorbachev's anti-booze campaign, although hugely unpopular, raised life expectancy by fully three years between 1985 and 1987. After 1992 the state monopoly on alcohol (and health checks on its quality) collapsed. As anybody who lived in Russia at the time will recall, the effect was spectacular and catastrophic. Death rates returned to their long term trend.

The thorniest equation is about economic policy mistakes after 1991. In retrospect, the West failed to prepare for the Soviet collapse. It took too long to recognize that Boris Yeltsin's first government deserved trust, pressing it too hard on debt repayment and being too stingy with aid. Then it made the opposite mistake, being too trusting and generous when Russia was becoming more hawkish and looting was endemic. Mass privatization broke the planner's grip but failed to create the hoped-for shareholder democracy.

Yet the paper seriously misunderstands both the timing and the effects of economic reform. It states quite wrongly that "Russia fully implemented shock therapy by 1994". As it happens, in that year life expectancy started rising. But in any case reforms were by then bogged down. Moreover, mass privatization had little immediate effect on jobs or much else. Most Russians exchanged their vouchers for trivial amounts of cash, or even vodka. That may have been marginally bad for their health but it does not explain the huge jump in the death rate.

Correlation is not causation. Mass privatization was not the most important or effective part of "shock therapy" and the rise in death rates is out of sync with efforts at economic reform. Mistakes were made, but Russia's tragedy was that reform came too slowly, not too fast.

25. The author is primarily concerned with

- (A) expressing the opinion that economic reforms are not the answer for the well being of Russians.
- (B) arguing that Russia should have smoothed in economic reforms in a calibrated manner.
- (C) exploring the relationship between the economic collapse in Russia and the health of its people.
- (D) exploring the relationship between economic reforms and male life expectancy in Russia between 1991 and 1994.

26. Which of the following can be understood from the passage?

- (A) Russians squandered their equity on alcohol and vandalism.
- (B) Oversupply of Russian currency spurred its devaluation.
- (C) Gorbachev's teetotal policies had only a marginal impact on life expectancy.
- (D) The supply of essential commodities declined and hastened the collapse of Russia.

27. Which of the following statements about shock therapy, according to the author, are true?

- (a) It refers to the transfer of equity from the state to the people, among other reforms.
 - (b) Russia had implemented shock therapy by the mid-1990s.
 - (c) Shock therapy resulted in unemployment.
 - (d) The fall in life expectancy during shock therapy was not proportional to the efforts of economic reform.
- | | |
|-------------|----------------|
| (A) a and c | (B) b, c and d |
| (C) c and d | (D) a, c and d |

DIRECTIONS for questions 28 to 30: Answer the questions on the basis of the information given below.

A locality has three houses, each painted in a different colour among Red, Blue and Green. Each house is

occupied by exactly one person among Anand, Boman and Chintu. When asked about who lives in which house, each of them made exactly two statements as follows:

Anand –

- Statement I : *I live in the Red house.*
Statement II : *Boman lives in the Green house.*

Boman –

- Statement I : *Chintu doesn't live in the Red house.*
Statement II : *I don't live in the Blue house.*

Chintu –

- Statement I : *I live in the Green house.*
Statement II : *Anand doesn't live in the Red house.*

Further it is known that exactly three of the above six statements are true.

28. If it is known that both the statements made by one of the persons are true, then who lives in the Red house?

- | | |
|------------|-----------------------|
| (A) Anand | (B) Boman |
| (C) Chintu | (D) Data inconsistent |

29. For which person is it possible that both the statements made by that person are false?

- | | |
|------------|--------------------------------|
| (A) Anand | (B) Boman |
| (C) Chintu | (D) More than one of the three |

30. If Anand lives in the Blue house, then for which person is it possible that both the statements made by that person are true?

- | | |
|------------|-------------------|
| (A) Anand | (B) Boman |
| (C) Chintu | (D) None of these |

(Key and Solutions for AIMCAT1304)

Key

SECTION – I

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

SECTION – II

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

Solutions

SECTION – I

Solutions for questions 1 to 8:

1. The amount to be paid by Pradeep to bank A after

$$n \text{ years} = 10,00,000 \left(1 + \frac{20}{100}\right)^n$$

The amount to be paid by Pradeep to bank B after

$$n \text{ years} = 10,00,000 \left(1 + \frac{25n}{100}\right)$$

\therefore We have to maximise 'n' so that $\left(1 + \frac{20}{100}\right)^n < 1 + \frac{25n}{100}$

$$\Rightarrow (1.20)^n < 1 + 0.25n$$

For $n = 4$, $(1.20)^4 > 1 + 0.25n$.

Hence maximum value of n for bank A to be a better option is 3. Choice (B)

2. Given $a = \text{L.C.M of } (2, 4, 5, 10 \text{ and } 20) = 20$.

and $b = \text{H.C.F of } (12, 60, 75, \text{ and } 90) = 3$.

Now, the number of factors of N = ab

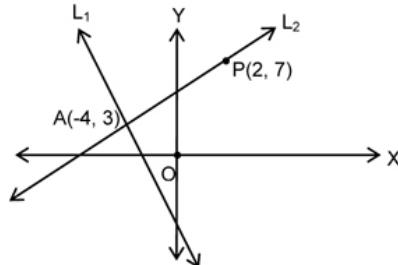
$$= (20)(3) = 60 = (2)(2)(3)(5)$$

\therefore Any number N that has 60 factors can be expressed as $a^{(2-1)} b^{(2-1)} c^{(3-1)} d^{(5-1)}$, where a, b, c, d are any distinct primes. Thus, the maximum number of distinct prime factors of such a number is 4. Choice (D)

3. Given that the equations of the lines are

$$3x + 2y + 6 = 0 \dots \text{(L}_1\text{)}$$

$$2x - 3y + 17 = 0 \dots \text{(L}_2\text{)}$$



B is a point on L_1 and C on L_2 and BC passes through P(2, 7). There are two possibilities

(i) $B \neq A$ and $C = P$ or

(ii) $B = A$ and C could be any point on L_2 (including A or P).

But as CA > 10, the first possibility is ruled out (AP < 10).

$\therefore B = A$ and C is some point on the line AP.

\therefore The required line is AP or L_2 itself. Choice (D)

4. Given,

$$T = F + VN$$

Where, T, F, V, N are the total expenditure, fixed expense, variable expense per student and the number of students.

Given, that the fixed expenses increased by 28% and variable expenses increased by 20% and number of students by 10%.

\therefore The total expenses now become $T_1 = 1.28F + 1.32VN$

Since, we do not know the initial ratio of total fixed and variable expenses, we cannot find the exact increase in the total expenditure. But it must lie between 28% and 32%. From the choices, it can be 30%. Choice (B)

5. As neither the distance between P and R nor the total time taken is known, speed of the stream cannot be found out.

Choice (D)

6. The quadratic equation whose roots are twice the roots of $f(x)$ is $f\left(\frac{x}{2}\right)$

$$\Rightarrow 4\left(\frac{x}{2}\right)^2 - 16\left(\frac{x}{2}\right) + 15 = 0$$

$$\Rightarrow x^2 - 8x + 15 = 0$$

Choice (D)

7. Let the volume of milk and water be $3k$ and $2k$ respectively.

$$\text{Now } \frac{3k}{2k+10} = \frac{2}{3}$$

$$\Rightarrow 9k = 4k + 20$$

$$\Rightarrow k = 4$$

$$\therefore \text{Final quantity} = 3k + 2k + 10 \\ = 5k + 10 \\ = 30$$

Choice (C)

$$\begin{aligned}
8. \quad & \log_{\sqrt[4]{2}} 16\sqrt{2} + \log_{\sqrt[3]{2}} 32\sqrt{32} \\
& = \log_{2^{1/4}} (2^4 \cdot 2^{1/2}) + \log_{2^{1/3}} (2^5 \cdot 2^{5/2}) \\
& = 4 \cdot \frac{9}{2} \log_2 2 + 3 \cdot \frac{15}{2} \log_2 2 = 18 + \frac{45}{2} = 40.5 \text{ Choice (A)}
\end{aligned}$$

Solutions for questions 9 to 11:

9. The percentage increase in the GDP will be the weighted average of percentage increase in each of the sectors from 1989-90 to 1991-92.

Percentage increase in Primary sector

$$= \left[1 + \frac{10}{100} \right]^2 - 1 = 0.21 = 21\%$$

Percentage increase in Secondary sector

$$= \left[1 + \frac{20}{100} \right]^2 - 1 = 0.44 = 44\%$$

Percentage increase in Tertiary sector

$$= \left[1 + \frac{40}{100} \right]^2 - 1 = 0.96 = 96\%$$

Percentage increase in GDP:

$$50\% \text{ of } 21\% + 30\% \text{ of } 44\% + 20\% \text{ of } 96\% = 42.9\% \text{ Choice (A)}$$

10. Let the GDP in 1989-90 be $100x$, with the share of Primary, Secondary and Tertiary sectors being $50x$, $30x$ and $20x$ respectively.

Primary sector production in 1990-91 = $1.1 \times 50x = 55x$

Secondary sector production in 1990-91 = $1.2 \times 30x = 36x$

Tertiary sector production in 1990-91 = $1.4 \times 20x = 28x$

$$\text{Share of Tertiary sector} = \frac{28x}{(55x + 36x + 28x)} \approx 23.57 \text{ Choice (D)}$$

11. Let the production of secondary sector be $30x$ and Primary sector be $50x$ in 1989-90.

Production of secondary sector in 1992-93

$$= 30x \times \left[1 + \frac{20}{100} \right]^3 = 51.84x$$

Increase in production = $51.84x - 30x = 21.84x$

Production of Primary sector in 1992-93

$$= 50x \times \left[1 + \frac{10}{100} \right]^3 = 66.55x$$

Increase in production = $66.55x - 50x = 16.55x$

$$\text{Required percentage} = \frac{21.84x}{16.55x} \approx 132\% \text{ Choice (B)}$$

Solution for question 12:

12. Given, $a > 0$

Using I alone, $3a + 2o > 5g$

Nothing can be said about o and g .

Using II alone, $3a + 5g < 8o$

$$\Rightarrow 3a + 5g < 3o + 5o$$

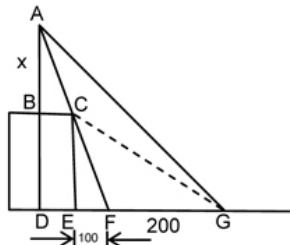
$$\text{As } a > o, 3a > 3o, \Rightarrow 5g < 5o. \Rightarrow g < o,$$

∴ II alone is sufficient.

Choice (A)

Solutions for questions 13 to 17:

- 13.



The first man is at A and the second is initially at E, reaches F and he then walks to G.

$$\text{Given } \tan(\angle AGD) = \frac{3}{4} \dots\dots\dots(1)$$

$$\text{and } \tan(\angle CGE) = \frac{1}{2} \dots\dots\dots(2)$$

$$(2) \Rightarrow CE = 150 (\because CE/EG = CE/300 = \frac{1}{2})$$

$\triangle ABC \sim \triangle CEF$

$$\frac{x}{BC} = \frac{CE}{EF} = \frac{150}{100} = \frac{3}{2}$$

∴ Let $BC = 2h$ and $x = 3h$

$$(1) \Rightarrow \frac{x+CE}{DE+300} = \frac{3}{4}$$

$$\Rightarrow \frac{3h+150}{2h+300} = \frac{3}{4} \Rightarrow h = 50$$

$$\therefore x = 150$$

Choice (B)

14. Let the time taken by A and B be $3x$ and $2x$ respectively.

Let time taken by C be y .

As efficiencies of B and C are in the ratio $3 : 1$,

$$\frac{\frac{1}{1}}{\frac{2x}{1}} = \frac{3}{1} \Rightarrow y = 6x$$

Now A, B and C together can complete the work in 21 days.

$$\Rightarrow \frac{1}{3x} + \frac{1}{2x} + \frac{1}{6x} = \frac{1}{21}$$

$$\Rightarrow \frac{2+3+1}{6x} = \frac{1}{21}$$

$$\Rightarrow \frac{6}{6x} = \frac{1}{21} \Rightarrow x = 21$$

∴ A and C working together

$$\Rightarrow \frac{1}{3x} + \frac{1}{6x} = \frac{1}{2x} = \frac{1}{42}$$

∴ A and C can complete the work in 42 days.

Alternative Solution:

$$\text{Ratio of efficiencies of A and B} = \frac{1}{3} : \frac{1}{2} = 2 : 3$$

$$\text{Ratio of efficiencies of B and C} = 3 : 1$$

$$\therefore \text{Ratio of efficiencies of A, B and C} = 2 : 3 : 1$$

As B is as efficient as A and C together, A and C take twice as long as A, B and C together

$$\Rightarrow 21 \times 2 = 42 \text{ days}$$

Choice (B)

$$15. \quad a f(x) + b f\left(\frac{1}{x}\right) = (a^2 - b^2) x$$

$$\text{When } x = p, a f(p) + b f\left(\frac{1}{p}\right) = (a^2 - b^2) p \rightarrow (1)$$

$$\text{When } x = \frac{1}{p}, a f\left(\frac{1}{p}\right) + b f(p) = \frac{a^2 - b^2}{p} \rightarrow (2)$$

$$(1) - (2) \Rightarrow (a-b)f(p) + (b-a)f\left(\frac{1}{p}\right) = (a^2 - b^2) \left(p - \frac{1}{p}\right)$$

$$\Rightarrow f(p) - f\left(\frac{1}{p}\right) = (a+b)\left(p - \frac{1}{p}\right) \rightarrow (3)$$

$$\text{Similarly } (1) + (2) \Rightarrow f(p) + f\left(\frac{1}{p}\right) = (a-b)\left(p + \frac{1}{p}\right) \rightarrow (4)$$

Solving for the two unknowns, $f(p)$ and $f\left(\frac{1}{p}\right)$, we get

$$f(p) = ap - \frac{b}{p}$$

or replacing p by x, we get $f(x) = ax - \frac{b}{x}$

Alternative Solution:

When $x = 1$,

$$a f(1) + b f(1) = a^2 - b^2 \Rightarrow f(1) = a - b$$

Only choice (A) satisfies this.

Choice (A)

16. $(625)_n = 6 \times n^2 + 2 \times n^1 + 5 \times n^0$

$$= 6n^2 + 2n + 5$$

$$(137)_n = n^2 + 3n + 7$$

$$5(137)_n = 5n^2 + 15n + 35$$

$$\text{Given that } 6n^2 + 2n + 5 = 5n^2 + 15n + 35$$

$$\Rightarrow n^2 - 13n - 30 = 0$$

$$\Rightarrow (n - 15)(n + 2) = 0$$

$$\Rightarrow n = 15 \text{ or } -2.$$

As n cannot be negative, n = 15.

Choice (C)

17. Let the number of sides of the polygon be 'n'.

$$\text{Sum of the interior angles} = (2n - 4) \times 90^\circ$$

$$\text{Each interior angle} = \frac{(2n - 4) \times 90^\circ}{n}$$

$$\text{Each interior angle} = \frac{360^\circ}{n}$$

$$\frac{(2n - 4) \times 90}{n}$$

$$\text{Thus } \frac{n}{\left(\frac{360}{n}\right)} = 12$$

$$\Rightarrow \frac{(2n - 4) \times 90}{360} = 12 \Rightarrow 2n - 4 = 48 \Rightarrow n = 26.$$

Choice (D)

Solutions for questions 18 to 20:

18. Cotton can be cultivated in a year, if the average rainfall of the preceding three years is at least 900 mm. In 2005, 2006, 2007 the highest rainfall was 900 mm in Northern region and hence the average is less than 900 mm. Thus cotton cannot be cultivated in 2008.

Similarly in 2009 cotton cannot be cultivated.
The average rainfall of 2007, 2008 and 2009 is

$$\frac{900 + 900 + 950}{3} > 900 \text{ mm}$$

\therefore Cotton can be cultivated in 2010.

The average rainfall of 2008, 2009 and 2010 is

$$\frac{900 + 950 + 900}{3} > 900 \text{ mm}$$

Thus cotton can be cultivated in 2011.

The average rainfall of 2009, 2010 and 2011 is

$$\frac{950 + 900 + 875}{3} > 900 \text{ mm}$$

Thus cotton can be cultivated in 2012.

Thus cotton can be cultivated in 3 years from 2008 to 2012.

Choice (B)

19. Rainfall received from 2007 to 2011, for different regions is as follows.

Central region: $825 + 650 + 1000 + 800 + 850 = 4125 \text{ mm}$

Northern region: $900 + 900 + 950 + 900 + 875 = 4525 \text{ mm}$

Southern region: $800 + 850 + 900 + 950 + 900 = 4400 \text{ mm}$

Thus central region received the lowest amount of rainfall from 2007 to 2011.

Choice (A)

20. The average rainfall 2007, 2008 and 2009 in Southern

$$\text{Region is } \frac{800 + 850 + 900}{3} = \frac{2550}{3} = 850 \text{ mm}$$

Thus all the crops with crop water need of less than 850 mm can be cultivated in Southern region in 2010. Thus only citrus and cotton cannot be cultivated.

Choice (B)

Solutions for questions 21 to 27:

21. Let $\sqrt{28 - 16\sqrt{3}} = \sqrt{a} - \sqrt{b}$ and hence

$$\sqrt{28 + 16\sqrt{3}} = \sqrt{a} + \sqrt{b}$$

$$\therefore \left(\sqrt{28 + 16\sqrt{3}} \right)^2 = (\sqrt{a} - \sqrt{b})^2$$

$$28 - 16\sqrt{3} = a + b - 2\sqrt{ab}$$

$$\therefore a + b = 28 \quad \rightarrow \quad (1)$$

$$\sqrt{ab} = 8\sqrt{3} = \sqrt{192}$$

$$\Rightarrow ab = 192 \quad \rightarrow \quad (2)$$

Substituting (2) in (1)

$$\Rightarrow a + \frac{192}{a} = 28$$

$$\Rightarrow a^2 - 28a + 192 = 0$$

$$\Rightarrow a^2 - 16a - 12a + 192 = 0$$

$$\Rightarrow (a - 16)(a - 12) = 0$$

$$\Rightarrow a = 16 \text{ or } 12.$$

From (1),

When $a = 16$, $b = 12$ and

When $a = 12$, $b = 16$

\therefore For $\sqrt{a} - \sqrt{b}$ to be positive $a = 16$ and $b = 12$

$$\sqrt{28 - 16\sqrt{3}} + \sqrt{28 + 16\sqrt{3}}$$

$$= \sqrt{a} - \sqrt{b} + \sqrt{a} + \sqrt{b}$$

$$= 2\sqrt{a} = 2\sqrt{16} = 8$$

Choice (A)

22. For the line $ax + by + c = 0$, x intercept is $-c/a$ and y-intercept is $-c/b$.

$$\text{Given that } -c/a = -c/b \Rightarrow \frac{c}{a} = \frac{c}{b} \Rightarrow \frac{c}{b} = \frac{-5}{3} \text{ and } \frac{b}{c} = \frac{-3}{5}$$

Choice (D)

23. Sum of all the natural numbers from 1 to 120 divisible by neither 2 nor 7 = sum of first 120 natural numbers - (sum of natural numbers divisible by either 2 or 7)

Sum of natural numbers divisible by either 2 or 7 = sum of natural numbers divisible by 2 + sum of natural numbers divisible by 7 - sum of natural numbers divisible by 14

$$= \frac{60}{2} [2 + 120] + \frac{17}{2} [7 + 119] - \frac{8}{2} [14 + 112]$$

$$= 4227 \text{ and}$$

$$\text{Sum of first 120 natural numbers} = [1 + 120] \frac{120}{2} = 7260$$

$$\text{Hence required sum} = 7260 - 4227 = 3033.$$

Choice (D)

24. Let the sum of all the 7 numbers be S. The sum of the six known elements of the set is 37.

Whatever the value of 'a', the median lies between 6 and 9, both inclusive.

When mean = 6, $S = 42 \Rightarrow a = 5$, and 6 is also the median, which is possible.

When mean = 7, $S = 49 \Rightarrow a = 12$, then 7 is not the median, which is a contradiction.

When mean = 8, $S = 56 \Rightarrow a = 19$, then 8 is not the median, which is a contradiction.

When mean = 9, $S = 63 \Rightarrow a = 26$, and 9 is also the median, which is possible.

\therefore 'a' can assume two values.

Choice (B)

25. Let the cost of an eraser be 'e', sharpener be 's' and pencil be 'p'

$$9e + 7s + 5p = 38 \rightarrow (1)$$

$$4e + 3s + 2p = 16 \rightarrow (2)$$

As the co-efficients in both the equations are in A.P., multiply the first equation with the common difference of the second equation and second equation with the common difference of the first equation.

$$\therefore 2 \times (2) \Rightarrow 8e + 6s + 4p = 32 \rightarrow (3)$$

$$(1) - (3) \text{ will give } e + s + p = 6 \rightarrow (4)$$

As e, s and p are all distinct natural numbers, they should take values among 1, 2 and 3.

$$\text{Now } (2) - (4) \Rightarrow 2e + s = 4 \rightarrow (5)$$

Among 1, 2 and 3, e and s can take 1 and 2 respectively to satisfy (5).

$$\Rightarrow p = 3$$

$$\text{Cost of 2 pencils and 3 sharpeners} = 2 \times 3 + 3 \times 2 = ₹12.$$

Choice (A)

26. Let the first term of the progression be 'a' and the common difference be 'd'.

$$9^{\text{th}} \text{ term} = a + (9 - 1)d = a + 8d$$

$$\text{Sum of first 9 terms} = \frac{a}{2} [2a + (9 - 1)d]$$

$$= \frac{9}{2} [2a + 8d] = 9a + 36d$$

Sum of the next four terms

$$= a + 9d + a + 10d + a + 11d + a + 12d = 4a + 42d$$

$$9a + 36d = 4a + 42d \Rightarrow 5a = 6d$$

$$\frac{a}{d} = \frac{6}{5}$$

Choice (A)

27. The value of $f(x)$ exists for all values except $12 - \lfloor x \rfloor = 0$

$$\Rightarrow \lfloor x \rfloor = 12$$

i.e., for $x \in [12, 13)$

$$\therefore \text{Range} = (-\infty, 12) \cup [13, \infty)$$

Choice (C)

Solutions for questions 28 to 30:

28. Let the electricity production in 1999-2000 be x units and 2004-05 by y units.

The percentage increase in Domestic sector

$$= \frac{0.25y - 0.22x}{0.22x} = \frac{25y - 22x}{22x}$$

$$= \frac{3y}{22x} + \frac{22(y - x)}{22x} = \frac{3y}{22x} + \frac{y - x}{x}$$

The percentage increase in Industry sector

$$= \frac{34y - 34x}{34x} = \frac{y - x}{x}$$

The percentage increase in Traction sector

$$= \frac{3y - 2x}{2x} = \frac{y}{2x} + \frac{y - x}{x}$$

As $\frac{y}{2x} > \frac{3y}{22x}$, the percentage increase is the highest for Traction.

Choice (C)

29. The amount of electricity consumed by commercial sector is less than 25% of the electricity consumed by industry sector for all the years except 2000-01, where it is 25%. Thus the consumption, over the given period of commercial sector is less than 25% of the consumption of Industry sector. Thus option A is definitely true.

For each of the given years the amount of electricity consumed by commercial sector is more than the amount of electricity consumed by traction sector. Thus option B is definitely true.

The amount of electricity consumed by the Industry sector is less than the amount of electricity consumed by agriculture sector in 2002-03. Thus, whether the Industry sector consumed more electricity than the agriculture sector cannot be determined unless the production figures

for each of the years is known. Thus option (C) is not definitely true.

As the amount of electricity consumed by the commercial sector is more than that of the traction sector, the electricity consumed by commercial sector will be more than that of others. Thus option (D) is definitely true.

Choice (C)

30. Traction sector consumed more electricity than others in 2002-03. Thus the sector with the lowest consumption cannot be determined unless the production of electricity in each of the years is known.

[Note: Commercial sector is ruled out as it consumed more electricity than traction in each of the given years].

Choice (D)

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

SECTION – II

Solutions for questions 1 to 3:

From conditions (ii) and (iii), A, B, C are the ministers with one portfolio each and from condition (i), E holds at least two portfolios \Rightarrow D holds either one or two portfolios.

From conditions (i) and (iii), E is either the minister of Finance and HRD or the minister of Finance, Agriculture and Petroleum.

From above and from condition (iv), D is either the HRD minister or the Minister for both Agriculture and Petroleum.

From above and from condition (ii), A should be the External affairs minister and B and C should be the Minister for Home and Power in any order.

The above results can be tabulated as follows.

A	B	C	D	E
External Affairs	Home / Power	Power / Home	(Agriculture and Petroleum)/HRD	Finance, HRD / (Agriculture & Petroleum)

1. From the above table, the portfolio of only A can be determined.

Choice (B)

2. The portfolio of B is not dependent on the portfolio of D. Hence option A is incorrect.

The portfolio of C is not dependent on the portfolio of A. Hence option (B) is incorrect.

If D is the HRD minister, then E will be the minister for Agriculture and Petroleum.

Hence option (C) is definitely true.

The portfolio of D is not dependent on the portfolio of A. Hence option (D) is incorrect.

Choice (C)

3. The portfolios of all the minister can be determined if the portfolios of either B or C is known and if the portfolio of either D or E is known.

Only from option (D) the portfolios of B, C, D and E can be determined and as the portfolio of A is already known, the portfolios of all the ministers can be determined using the information in option (D).

Choice (D)

Solutions for questions 4 and 5:

4. Part a is incorrect – the article 'a' is missing before 'mere', it should be 'a mere 6%'.

Part b is incorrect, it should be 'ethnically' not 'ethically'.

Part c is incorrect – the past tense 'were' is right not the present tense 'are' since the sentence is about the report in 2010. Parts d and e are correct.

Choice (D)

5. Part a is incorrect – it should be 'sorts' (plural) since the determiner is 'all'. Part b is incorrect – the adverb 'reliably' precedes the transitive verb 'forecast' (since the verb is followed by the object 'winners'). Part c should have the plural 'were' not the singular 'was' since the subject is 'expectations'. Parts d and e are correct. Choice (A)

Solutions for questions 6 and 7:

6. The para begins with the Pope's visit to Cuba in 1998 and how communism lives on in Cuba. Choice C ends appropriately by saying that the expectations will be more muted when the Pope visits again. Choice A does not conclude the para. Choice B is generalized – any dignitary. Choice D introduces a new idea. Choice (C)
7. The para talks of the problems faced by the tax payer in America – the difficulty in understanding the tax laws. Since the focus is on the tax payer and the pain he must go through, choice B concludes aptly by what happens if he makes a mistake. In choice A the focus shifts, as it does in choice C. Choice D seems apt but it does not conclude the para. Choice (B)

Solutions for questions 8 and 9:

8. Statement e introduces the paragraph. "ea" is a mandatory pair: statement a lists the things which are dependent on trust in a society and takes the idea of trust mentioned in statement e further. Statement b follows next and it highlights the fact that trust is indispensable to the functioning of a society. Statements d and c follow next. These statements talk about the role of leaders. "They" in sentence c refers to leaders mentioned in sentence d. Choice C is wrong as sentence d is a more specific statement (necessary level of trust....) than sentence e (.....general level of trust....). Sentence b cannot open the paragraph. So, eabdc. Choice (B)
9. Statement c introduces the paragraph. The reasoning given in statement e is Plato's explanation for the opening statement c. He also talks about the disadvantage of democracy. So e follows c. Statements e, b and a talk about the expertise needed for governing societies. The "he" in statement b refers to Plato. Statement b follows statement e. "This expertise" in statement a refers to the "expertise at winning elections" mentioned in statement b. So statement a follows b. Statement d is a fitting conclusion to the paragraph. So, cebad. Choice (D)

Solutions for questions 10 and 11:

10. From the statement it is clear that both blanks must have negative words. In C, fossil fuels can neither be exchangeable, nor 'depraved' (morally bad). In A, while we can treat fossil fuel as our entitlement, we wouldn't then think of exhausting them. In D, while 'dispensable' goes for the first blank, 'depreciate' (make less) is used for monetary value, not content. Further in our use of fossil fuels, we are bound to 'depreciate' them. But what we are doing is 'abuse' them. This is done because we think they are not needed or 'expendable' so we 'squander' or 'waste' them. Choice (B)
11. Both the blanks must complement each other meaningfully to bring in the idea that the original contracts signed were suitably modified to make profits. A is ruled out since 'reversal' is followed by 'of' not from. D can be ruled out as 'styles' does not fit in the second blank. In B 'digression' does not collocate with 'complete' as does 'departure'. 'Nuances' are subtle changes that are brought in. Choice (C)

Solutions for questions 12 to 14:

12. If the year is a non-leap year, the number of odd days will be January-3, February-0, March-3, April-2, May-3, June-2, July-3, August-3 and September-2.
Total number of odd days

$$= 3 + 0 + 3 + 2 + 3 + 2 + 3 + 3 + 2 = 21 \text{ days}$$

As $21/7 = 0$, October 1st is the same day as January 1st. Thus October will have 5 Saturdays and 5 Sundays. The person will take rest on 3 Saturdays and 3 Sundays \Rightarrow The person works for $31 - 6 = 25$ days.

If the year is a leap year, there will be 22 odd days $\frac{22}{7}$ will

have a remainder of 1. Thus 1st October will be a Saturday, in which case, it will have 5 Saturdays and 5 Sundays \Rightarrow The person works for 25 days. Choice (A)

13. T is taller than P, R and S from the first statement and as Q is shorter than S, T is the tallest among the five. P is taller than R, who is taller than S, who in turn is taller than Q. Hence P is the second tallest. As Q is shorter than S, who is shorter than R, R is the third tallest. Choice (C)

14. A $9 \times 9 \times 9$ cube can be cut into 27 cubes of size $3 \times 3 \times 3$. Each $3 \times 3 \times 3$ cube can in turn be cut into 27, $1 \times 1 \times 1$ cubes. Each $3 \times 3 \times 3$ cube will have $(3-2)^3$ cubes with none of the faces painted $\Rightarrow (3-2)^3 = 1$
Total number of cubes with no face painted = $27 \times 1 = 27$.
Total number of cubes = $27 \times 27 = 729$
Total number of cubes with at least one face painted = $729 - 27 = 702$
Choice (D)

Solutions for questions 15 and 16:

15. In (A) 'grill' is noun and means the iron bar over which food is cooked in barbecue style. In (B) 'grilled' food is food grilled like meat, sausages etc. 'Grilled' is wrongly used in (D) as pies, like cakes, are baked and not grilled. Choice (D)
16. In (A) 'idea' means 'plan' and in (C) it means 'impression'. In (D) 'ideas' means 'opinions' or 'views'. In (B), 'idea' is incorrectly used. When we express something negative about a person or situation, we use 'point' and not 'idea'. The sentence should have been 'I don't see the point of'
Choice (B)

Solution for question 17:

17. Options D, C and A explain how the cost and effort of setting up a radio station (transmission) has changed. Option B talks about the development in radios (the receiver) and so is not a part of this context.
Choice (B)

Solutions for questions 18 to 27:

Number of words and Explanatory notes for RC:

Number of words :

Passage I: 623
Passage II: 255
Passage III: 608

18. The passage essentially dwells on the immortality narratives and then concludes that all the narratives fail, and even if they did succeed, the result would be a meaningless existence. (A) is misleading, as the narratives are illusions. So is (C). (D) is part of the Staying Alive narrative. (B) is most appropriate, as everything finally boils down to wishful thinking. Thus (B) is the answer.
Choice (B)
19. The passage mentions "identity problems" associated with the Resurrection narrative. So (C) can be reasonably inferred. (A) is stated in the passage and is not inferred. (B) and (D) fall outside the scope of the passage. Thus (C) is the answer.
Choice (C)
20. The passage mentions "four fundamental immortality narratives", which are given in (B). Thus (B) is the answer.
Choice (B)

21. The mortality paradox supports the view that the failing body is the true self, which means that death is inevitable; only (D) introduces a paradox with 'impossible' to signify a state of denial or an obsession to live forever. There is no paradoxical element in (A) and (C). (B) is Cave's view. Thus, (D) is the answer.
Choice (D)
22. Choice (A) is not stated in the passage. Choice (C) is just a definition. Choice (D) is an observation. Choice (B) is stated "..... face a reckoning on goodwill amassed" (end of first para). Hence, choice (B) is the answer.
Choice (B)
23. (a) is stated in the last sentence of the passage. (b) can be inferred "in rosier times" (para 3, end). 'Empire builders' would be 'buying firms' and 'splashed out on' would be 'spent on'. (c) is clearly inferred "overvalued assets" (para 1). (d) can be inferred, "avoid being seen go easy....". Hence, choice (D) is the answer.
Choice (D)
24. The passage describes the perception of the said industries as "wary" as expressed in choice (C). Choice (A) stated. Choice (B) does not make sense, why should the industries be suspicious? Choice (D) is not justified by the passage. Only, choice (C) can be inferred.
Choice (C)
25. Policy making is not on the author's agenda, so choice (A) is doubtful. Choice (B) is the right answer – refer to para 3 where the author says that reforms in Russia started only in the late 1980s and says Brezhnev failed to start reforms in the early 1970s. Para 2 last sentence also points to 'gradual reform'. The last sentence of the passage refers to the pace of reforms. Though health and life expectancy are mentioned, they are not the focus, hence C and D are ruled out.
Choice (D)
26. Choice (A) is the rather drastic. Choice (B) can be inferred "running the (money) printing presses red hot cash was ... worthless" (para 3). Choice (C) is not true, "..... anti booze campaign raised life expectancy by fully three years" Choice (D) refers to "matches" and "salt" but this is a symptom rather than a cause of the said collapse. Hence, choice (B) is the answer.
Choice (B)
27. The nickname 'shock therapy' does apply to mass privatization though it was not the most important part, (last para). (a) is true. (b) is not true – "It (the paper) states quite wrongly that Russia implemented shock therapy by 1994" (penultimate para). (c) is true, the author refers in para 2 to the 'human cost' which included unemployment. (d) is not true, the author states in the last para that 'correlation is not causation'.
Choice (A)

Solutions for questions 28 to 30:

Let us denote Anand, Boman and Chintu as A, B and C respectively and their first statements as A1, B1 and C1 and second statements as A2, B2 and C2.

Three people can be arranged in 3 houses in 3! i.e., 6 ways. Let us look at each of the cases.

Case (i)

A	B	C
Red	Blue	Green

Case (ii)

A	B	C
Red	Green	Blue

Case (iii)

A	B	C
Green	Red	Blue

A1	T
A2	F
B1	T
B2	F
C1	T
C2	F

A1	T
A2	T
B1	T
B2	T
C1	F
C2	F

A1	F
A2	F
B1	T
B2	T
C1	T
C2	T

Case (iv)

A	B	C
Green	Blue	Red

Case (v)

A	B	C
Blue	Red	Green

Case (vi)

A	B	C
Blue	Green	Red

Only in case (i), case (iii) and case (vi) there are exactly three true statements.

28. In case (iii), both the statements made by B are true and in this case B lives in Red house.

Alternative Solution:

We can also approach this set question by question instead of solving the whole set.

Given that both the statements made by one of the persons are true.

Hence we can check for A, B and C for both the statements to be true.

A cannot have both the statements true, in which case both the statements of B are true, making the total true statements more than three.

B can have both statements true, in which case the only possible arrangement with exactly three true statements is
A – Green (F, F)
B – Red (T, T)
C – Blue (F, T)

Similarly C cannot have both statements true.

Choice (B)

29. Only in case (iii) both the statements of A can be false.

Alternative Solution:

We can also approach this set question by question instead of solving the whole set.

If both the statements made by a person are false, then both the statements made by one of the other persons should be true (to make exactly three true statements)

Hence from the above solution, which is the only possible case, A has both the statements as false. Choice (A)

30. Of the three possible cases, A lives in Blue house in case (vi). In this case, both the statements made by none among A, B, C are true.

Alternative Solution:

We can also approach this set question by question instead of solving the whole set.

In the only case with a person with both the statements true, Anand lives in green house.

Hence no such case is possible.

Choice (D)

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