

SECTION – I

- How many pairs of positive integers m, n satisfy

$$\frac{1}{m} + \frac{4}{n} = \frac{1}{12}$$
 where n is an odd integer less than 60?

[1] 7	[2] 5	[3] 3
[4] 6	[5] 4	
- A confused bank teller transposed the rupees and paise when he cashed a cheque for Shailaja, giving her rupees instead of paise and paise instead of rupees. After buying a toffee for 50 paise, Shailaja noticed that she was left with exactly three times as much as the amount on the cheque. Which of the following is a valid statement about the cheque amount?

[1] Over Rupees 22 but less than Rupees 23
[2] Over Rupees 18 but less than Rupees 19
[3] Over Rupees 4 but less than Rupees 5
[4] Over Rupees 13 but less than Rupees 14
[5] Over Rupees 7 but less than Rupees 8
- Suppose you have a currency, named Miso, in three denominations: 1 Miso, 10 Misos and 50 Misos. In how many ways can you pay a bill of 107 Misos?

[1] 18	[2] 15	[3] 19
[4] 17	[5] 16	

Directions (Qs. 4 & 5):

Mr. David manufactures and sells a single product at a fixed price in a niche market. The selling price of each unit is Rs. 30. On the other hand, the cost, in rupees, of producing x units is $240 + bx + cx^2$, where b and c are some constants. Mr. David noticed that doubling the daily production from 20 to 40 units increases the daily production cost by $66\frac{2}{3}\%$. However, an increase in daily production from 40 to 60 units results in an increase of only 50% in the daily production cost. Assume that demand is unlimited and that Mr. David can sell as much as he can produce. His objective is to maximize the profit.

- How many units should Mr. David produce daily?

[1] 70	[2] 150	[3] 130
[4] 100	[5] Can't be determined	
- What is the maximum daily profit, in rupees, that Mr. David can realize from his business?

[1] 840	[2] 760	[3] 620
[4] 920	[5] Can't be determined	

Directions (Qs.6 & 7):

Let $a_1 = p$ and $b_1 = q$, where p and q are positive quantities. Define

$$a_n = p^{b_{n-1}}, \quad b_n = q^{b_{n-1}}, \quad \text{for even } n > 1,$$

$$\text{and } a_n = pa_{n-1}, \quad b_n = q^{a_{n-1}}, \quad \text{for odd } n > 1.$$

6. Which of the following best describes $a_n + b_n$ for even n ?

- [1] $q^{\frac{1}{2}n} (p+q)$ [2] $q^{\frac{1}{2}n} (p+q)^{\frac{1}{2}n}$ [3] $q(pq)^{\frac{1}{2}n-1} (p+q)^{\frac{1}{2}n}$
 [4] $q(pq)^{\frac{1}{2}n-1} (p+q)$ [5] $qp^{\frac{1}{2}n-1} (p+q)$

7. If $p = \frac{1}{3}$ and $q = \frac{2}{3}$, then what is the smallest odd n such that $a_n + b_n < 0.01$?

- [1] 11 [2] 9 [3] 15
 [4] 7 [5] 13

8. In a tournament, there are n teams T_1, T_2, \dots, T_n , with $n > 5$. Each team consists of k players, $k > 3$. The following pairs of teams have one player in common: $T_1 \& T_2, T_2 \& T_3, \dots, T_{n-1} \& T_n$, and $T_n \& T_1$. No other pair of teams has any player in common. How many players are participating in the tournament, considering all the n teams together?

- [1] $n(k-2)$ [2] $k(n-2)$ [3] $(n-1)(k-1)$
 [4] $n(k-1)$ [5] $k(n-1)$

9. Consider four digit numbers for which the first two digits are equal and the last two digits are also equal. How many such numbers are perfect squares?

- [1] 4 [2] 0 [3] 1
 [4] 3 [5] 2

Directions (Qs.10 & 11): Shabnam is considering three alternatives to invest her surplus cash for a week. She wishes to guarantee maximum returns on her investment. She has three options, each of which can be utilized fully or partially in conjunction with others.

Option A: Invest in a public sector bank. It promises a return of +0.10%.

Option B: Invest in mutual funds of ABC Ltd. A rise in the stock market will result in a return of +5%, while a fall will entail a return of -3%.

Option C: Invest in mutual funds of CBA Ltd. A rise in the stock market will result in a return of -2.5%, while a fall will entail a return of +2%.

10. The maximum guaranteed return to Shabnam is

- [1] 0.20% [2] 0.15% [3] 0.30%
 [4] 0.25% [5] 0.10%

11. What strategy will maximize the guaranteed return to Shabnam?

- [1] 64% in option B and 36% in option C
 [2] 1/3 in each of the three options
 [3] 30% in option A, 32% in option B and 38% in option C
 [4] 100% in option A
 [5] 36% in option B and 64% in option C

19. A function $f(x)$ satisfies $f(1) = 3600$, and $f(1) + f(2) + \dots + f(n) = n^2 f(n)$, for all positive integers $n > 1$. What is the value of $f(9)$?
 [1] 200 [2] 100 [3] 120
 [4] 80 [5] 240
20. Consider the set $S = \{2, 3, 4, \dots, 2n+1\}$, where n is a positive integer larger than 2007. Define X as the average of the odd integers in S and Y as the average of the even integers in S . What is the value of $X - Y$?
 [1] $\frac{1}{2}n$ [2] $\frac{n+1}{2n}$ [3] 2008
 [4] 80 [5] 240
21. Ten years ago, the ages of the members of a joint family of eight people added up to 231 years. Three years later, one member died at the age of 60 years and a child was born during the same year. After another three years, one more member died, again at 60, and a child was born during the same year. The current average age of this eight-member joint family is nearest to
 [1] 21 years [2] 25 years [3] 24 years
 [4] 23 years [5] 22 years

Directions (Qs.22 & 25): Each question is followed by two statements A and B. Indicate your responses based on the following directives:

Mark [1] if the question can be answered using A alone but not using B alone.

Mark [2] if the question can be answered using B alone but not using A alone.

Mark [3] if the question can be answered using A and B together, but not using either A or B alone.

Mark [4] if the question cannot be answered even using A and B together.

22. ABC Corporation is required to maintain at least 400 Kilolitres of water at all times in its factory, in order to meet safety and regulatory requirements. ABC is considering the suitability of a spherical tank with uniform wall thickness for the purpose. The outer diameter of the tank is 10 meters. Is the tank capacity adequate to meet ABC's requirements?
 A: The inner diameter of the tank is at least 8 meters.
 B: The tank weighs 30,000 kg when empty, and is made of a material with density of 3 gm/cc.
23. Consider integers x , y and z . What is the minimum possible value of $x + y + z$?
 A: $x + y + z = 89$
 B: Among x , y , z two are equal.
24. The average weight of a class of 100 students is 45 kg. The class consists of two sections, I and II, each with 50 students. The average weight, W_I , of Section I is smaller than the average weight, W_{II} , of Section II. If the heaviest student, say Deepak, of Section II is moved to Section I, and the lightest student, say Poonam, of Section I is moved to Section II, then the average weights of the two sections are switched, i.e., the average weight of Section I becomes W_{II} and that of Section II becomes W_I . What is the weight of Poonam?
 A: $W_{II} - W_I = 1.0$
 B: Moving Deepak from Section II to I (without any move from I to II) makes the average weights of the two sections equal.
25. Rahim plans to draw a square JKLM with a point O on the side JK but is not successful. Why is Rahim unable to draw the square?
 A: The length of OM is twice that of OL.
 B: The length of OM is 4 cm.

28. A US citizen is hurt in an accident and requires an angioplasty, hip replacement and a knee replacement. Cost of foreign travel and stay is not a consideration since the government will take care of it. Which country will result in the cheapest package, taking cost of poor quality into account?
 [1] India [2] Thailand [3] Malaysia
 [4] Singapore [5] USA
29. The rupee value increases to Rs.35 for a US Dollar, and all other things including quality, remain the same. What is the approximate difference in cost, in US Dollars, between Singapore and India for a Spinal Fusion, taking this change into account?
 [1] 700 [2] 2500 [3] 4500
 [4] 8000 [5] No difference

Directions (Qs.30 to 34): Answer the following questions based on the information given below:

A low-cost airline company connects ten Indian cities, A to J. The table below gives the distance between a pair of airports and the corresponding price charged by the company. Travel is permitted only from a departure airport to an arrival airport. The customers do not travel by a route where they have to stop at more than two intermediate airports.

Sector No.	Airport of Departure	Airport of Arrival	Distance between the Airports (km)	Price (Rs.)
1	A	B	560	670
2	A	C	790	1350
3	A	D	850	1250
4	A	E	1245	1600
5	A	F	1345	1700
6	A	G	1350	2450
7	A	H	1950	1850
8	B	C	1650	2000
9	B	H	1750	1900
10	B	I	2100	2450
11	B	J	2300	2275
12	C	D	460	450
13	C	F	410	430
14	G	G	910	1100
15	D	E	540	590
16	D	F	625	700
17	D	G	640	750
18	D	H	950	1250
19	D	J	1650	2450
20	E	F	1250	1700
21	E	G	970	1150
22	E	H	850	875
23	F	G	900	1050
24	F	I	875	950
25	F	J	970	1150
26	G	I	510	550
27	G	J	830	890
28	H	I	790	970
29	H	J	400	425
30	I	J	460	540

30. What is the lowest price, in rupees, a passenger has to pay for travelling by the shortest route from A to J?
 [1] 2275 [2] 2850 [3] 2890
 [4] 2930 [5] 3340
31. The company plans to introduce a direct flight between A and J. The market research results indicate that all its existing passengers travelling between A and J will use this direct flight if it is priced 5% below the minimum price that they pay at present. What should the company charge approximately, in rupees, for this direct flight?
 [1] 1991 [2] 2161 [3] 2707
 [4] 2745 [5] 2783
32. If the airports C, D and H are closed down owing to security reasons, what would be the minimum price, in rupees, to be paid by a passenger travelling from A to J?
 [1] 2275 [2] 2615 [3] 2850
 [4] 2945 [5] 3190
33. If the prices include a margin of 10% over the total cost that the company incurs, what is the minimum cost per kilometer that the company incurs in flying from A to J?
 [1] 0.77 [2] 0.88 [3] 0.99
 [4] 1.06 [5] 1.08
34. If the prices include a margin of 15% over the total cost that the company incurs, which among the following is the distance to be covered in flying from A to J that minimizes the total cost per kilometer for the company?
 [1] 2170 [2] 2180 [3] 2315
 [4] 2350 [5] 2390

Directions (Qs. 35 to 38): Answer the following questions based on the information given below:

A health-drink company's R & D department is trying to make various diet formulations, which can be used for certain specific purposes. It is considering a choice of 5 alternative ingredients (O, P, Q, R, and S), which can be used in different proportions in the formulations. The table below gives the composition of these ingredients. The cost per unit of each of these ingredients is O: 150, P: 50, Q: 200, R: 500, S: 100.

Ingredient	Composition			
	Carbohydrate %	Protein %	Fat %	Minerals %
O	50	30	10	10
P	80	20	0	0
Q	10	30	50	10
R	5	50	40	5
S	45	50	0	5

35. In what proportion P, Q and S should be mixed to make a diet having at least 60% carbohydrate at the lowest per unit cost?
 [1] 2:1:3 [2] 4:1:2 [3] 2:1:4
 [4] 3:1:2 [5] 4:1:1
36. The company is planning to launch a balanced diet required for growth needs of adolescent children. This diet must contain at least 30% each of carbohydrate and protein, no more than 25% fat and at least 5% minerals. Which one of the following combinations of equally mixed ingredients is feasible?
 [1] O and P [2] R and S [3] P and S
 [4] Q and R [5] O and S

Directions (Qs.47 to 50): Answer the following questions based on the information given below:
The proportion of male students and the proportion of vegetarian students in a school are given below.
The school has a total of 800 students, 80% of whom are in the Secondary Section and rest equally divided between Class 11 and 12.

	Male (M)	Vegetarian (V)
Class 12	0.60	
Class 11	0.55	0.50
Secondary Section		0.55
Total	0.475	0.53

47. What is the percentage of male students in the secondary section?
[1] 40 [2] 45 [3] 50
[4] 55 [5] 60
48. In the Secondary Section, 50% of the students are vegetarian males. Which of the following statements is correct?
[1] Except vegetarian males, all other groups have same number of students.
[2] Except non-vegetarian males, all other groups have same number of students.
[3] Except vegetarian females, all other groups have same number of students.
[4] Except non-vegetarian females, all other groups have same number of students.
[5] All of the above groups have the same number of students.
49. What is the percentage of vegetarian students in Class 12?
[1] 40 [2] 45 [3] 50
[4] 55 [5] 60
50. In Class 12, twenty five per cent of the vegetarians are male. What is the difference between the number of female vegetarians and male non-vegetarians?
[1] less than 8 [2] 10 [3] 12
[4] 14 [5] 16

SECTION – III

Directions (Qs. 51 to 54): In each question, there are five sentences/paragraphs. The sentence/paragraph labelled A is in its correct place. The four that follow are labelled B, C, D and E, and need to be arranged in the logical order to form a coherent paragraph/passage. From the given options, choose the **most appropriate** option.

51.

- A. In America, highly educated women, who are in stronger position in the labour market than le qualified ones, have higher rates of marriage than other groups.
- B. Some work supports the Becker thesis, and some appears to contradict it.
- C. And, as with crime, it is equally inconclusive.
- D. But regardless of the conclusion of any particular piece of work, it is hard to establish convincir connections between family changes and economic factors using conventional approaches.
- E. Indeed, just as with crime, an enormous academic literature exists on the validity of the pin economic approach to the evolution of family structures.

[1] BCDE

[2] DBEC

[3] BDCE

[4] ECBD

[5] EBCD

52.

- A. Personal experience of mothering and motherhood are largely framed in relation to two discernibl or "official" discourses: the "medical discourse and natural childbirth discourse". Both of thes tend to focus on the "optimistic stories" of birth and mothering and underpin stereotypes of th "good mother".
- B. At the same time, the need for medical expert guidance is also a feature for contemporar reproduction and motherhood. But constructions of good mothering have not always been si conceived - and in different contexts may exist in parallel to other equally dominant discourses.
- C. Similarly, historical work has shown how what are now taken-for-granted aspects of reproductioi and mothering practices result from contemporary "pseudoscientific directives" and "managec constructs". These changes have led to a refraining of modern discourses that pattern pregnanc) and motherhood leading to an acceptance of the need for greater expert management.
- D. The contrasting, overlapping, and ambiguous strands within these frameworks focus to varying degrees on a woman's biological tie to her child and predisposition to instinctively know and be able to care for her child.
- E. In addition, a third, "unofficial popular discourse" comprising "old wives" tales and based on maternal experiences of childbirth has also been noted. These discourses have also been acknowledged in work exploring the experiences of those who apparently do not "conform" to conventional stereotypes of the "good mother".

[1] EDBC

[2] BCED

[3] DBCE

[4] EDCB

[5] BCDE

53.

- A. Indonesia lias experienced dramatic shifts in its formal governance arrangements since the fall of President Soeharto and the close of his centralized, authoritarian "New Order" regime in 1997.
- B. The political system has taken its place in the nearly 10 years since *Reformasi* began. It has featured the active contest for political office among a proliferation of parties at central, provincial and district levels; direct elections for the presidency (since 2004); and radical changes in centre-local government relations towards administrative, fiscal, and political decentralization.
- C. The mass media, once tidily under Soeharto's thumb, has experienced significant liberalization, as has the legal basis for non-governmental organizations, including many dedicated to such controversial issues as corruption control and human rights.
- D. Such developments are seen optimistically by a number of donors and some external analysts, who interpret them as signs of Indonesia's political normalization.

- E. A different group of analysts paint a picture in which the institutional forms have changed, but power relations have not. Vedi Hadiz argues that Indonesia's "democratic transition" has been anything but linear.

[1] BDEC

[2] CEDE

[3] CEBD

[4] DEBC

[5] BCDE

54.

- A. I had six thousand acres of land, and had thus got much spare land besides the coffee plantation. Part of the farm was native forest, and about one thousand acres were squatters' land, what [the Kikuyu] called their *shambas*.

- B. The squatters' land was more intensely alive than the rest of the farm, and was changing with the seasons the year round. The maize grew up higher than your head as you walked on the narrow hard-trampled footpaths in between the tall green rustling regiments.

- C. The squatters are Natives, who with their families hold a few acres on a white man's farm, and in return have to work for him a certain number of days in the year. My squatters, I think, saw the relationship in a different light, for many of them were born on the farm, and their fathers before them, and they very likely regarded me as a sort of superior squatter on their estates.

- D. The Kikuyu also grew the sweet potatoes that have a vine like leaf and spread over the ground like a dense entangled mat, and many varieties of big yellow and green speckled pumpkins.

- E. The beans ripened in the fields, were gathered and thrashed by the women, and the maize stalks and coffee pods were collected and burned, so that in certain seasons thin blue columns of smoke rose here and there all over the farm.

[1] CBDE

[2] CBED

[3] BCDE

[4] DBCE

[5] EDBC

Directions (Qs. 55 to 57): The passage given below is followed by a set of three questions. Choose the **most appropriate** answer to each question.

Every civilized society lives and thrives on a silent but profound agreement as to what is to be accepted as the valid mould of experience. Civilization is a complex system of dams, dykes, and canals warding off, directing, and articulating the influx of the surrounding fluid element; a fertile fenland, elaborately drained and protected from the high tides of chaotic, unexercised, and inarticulate experience. In such a culture, stable and sure of itself within the frontiers of 'naturalized' experience, the arts wield their creative power not so much in width as in depth. They do not create new experience, but deepen and purify the old. Their works do not differ from one another like -a new horizon from a new horizon, but like a madonna from a madonna.

The periods of art which are most vigorous in creative passion seem to occur when the established pattern of experience loosens its rigidity without as yet losing its force. Such a period was the Renaissance, and Shakespeare its poetic consummation. Then it was as though the discipline of the old order gave depth to the excitement of the breaking away, the depth of job and tragedy, of incomparable conquests and irredeemable losses. Adventurers of experience set out as though in lifeboats to rescue and bring back to the shore treasures of knowing and feeling which the old order had left floating on the high seas. The works of the early Renaissance and the poetry of Shakespeare vibrate with the compassion for live experience in danger of dying from exposure and neglect. In this compassion was the creative genius of the age. Yet, it was a genius of courage, not of desperate audacity. For, however elusively, it still knew of harbours and anchors, of homes to which to return, and of barns in which to store the harvest. The exploring spirit of art was in the depths of its consciousness still aware of a scheme of things into which to fit its exploits and creations.

But the more this scheme of things loses its stability, the more boundless and uncharted appears the ocean of potential exploration. In the blank confusion of infinite potentialities flotsam of significance gets attached to jetsam of experience; for everything is sea, everything is at sea –

.... The sea is all about us;
The sea is the land's edge also, the granite
Into which it reaches, the beaches where it tosses
Its hints of earlier and other creation ...

- and Rilke tells a story in which, as in T.S. Eliot's poem, it is again the sea and the distance of 'other creation' that becomes the image of the poet's reality. A rowing boat sets out on a difficult passage. The oarsmen labour in exact rhythm. There is no sign yet of the destination. Suddenly a man, seemingly idle, breaks out into song. And if the labour of the oarsmen meaninglessly defeats the real resistance of the real waves, it is the idle single who magically conquers the despair of apparent aimlessness. While the people next to him try to come to grips with the element that is next to them, his voice seems to bind the boat to the farthest distance so that the farthest distance draws it towards itself. 'I don't know why and how,' is Rilke's conclusion, 'but suddenly I understood the situation of the poet, his place and function in this age. It does not matter if one denies him every place - except this one. There one must tolerate him.'

55. In the passage, the expression "like a madonna from a madonna" alludes to
- [1] The difference arising as a consequence of artistic license.
 - [2] The difference between 'life' and 'interpretation of life'.
 - [3] The difference between two artistic interpretations.
 - [4] The difference between 'width' and 'depth' of creative power.
 - [5] The difference between the legendary character and the modern day singer.
56. The sea and 'other creation' leads Rilke to
- [1] Define the place of the poet in his culture.
 - [2] Reflect on the role of the oarsman and the singer.
 - [3] Muse on artistic labour and its aimlessness.
 - [4] Understand the elements that one has to deal with.
 - [5] Delve into natural experience and real waves.
57. According to the passage, the term "adventurers of experience" refers to
- [1] Poets and artists who are driven by courage.
 - [2] Poets and artists who create their own genre.
 - [3] Poets and artists of the Renaissance.
 - [4] Poets and artists who revitalize and enrich the past for us.
 - [5] Poets and artists who delve in flotsam and jetsam in sea.

Directions (Qs. 58 to 60): In each question, there are four sentences. Each sentence has pairs of words/phrases that are italicized and highlighted. From the italicized and highlighted word(s)/phrase(s), select the **most appropriate** word(s)/phrase(s) to form correct sentences. Then, from the options given, choose the best one.

58. The cricket council that *was* [A] / *were* [B] elected last March *is* [A] / *are* [B] at sixes and sevens over new rules.
The critics *censored* [A] / *censured* [B] the new movie because of its social unacceptability.
Amit's explanation for missing the meeting was *credulous* [A] / *credible* [B]. She coughed *discreetly* [A] / *discretely* [B] to announce her presence.
- | | | |
|-----------|-----------|-----------|
| [1] AABBA | [2] AAABA | [3] BBBBA |
| [4] BBAAA | [5] BBBA | |
59. The *further* [A] / *farther* [B] he pushed himself, the more disillusioned he grew. .
For the crowds it was more of a *historical* [A] / *historic* [B] event; for their leader, it was just another day.
The old man has a healthy *distrust* [A] / *mistrust* [B] for all new technology.

This film is based on a *real* [A] / *true* [B] story.
One suspects that the *compliment* [A] / *complement* [B] was backhanded.
[1] BABAB [2] ABBBA [3] BAABA
[4] BBAAB [5] ABABA

60. *Regrettably* [A] / *Regretfully* [B] I have to decline your invitation.
I am drawn to the poetic, *sensual* [A] / *sensuous* [B] quality of her paintings.
He was *besides* [A] / *beside* [B] himself with rage when I told him what I had done.
After brushing against a *stationary* [A] / *stationery* [B] truck my car turned turtle.
As the water began to rise *over* [A] / *above* [B] the danger mark, the signs of an imminent flood were clear.
[1] BAABA [2] BBBAB [3] AAABA
[4] BBAAB [5] BABAB

Directions (Qs. 61 to 63): The passage given below is followed by a set of three questions. Choose the **most appropriate** answer to each question.

Human Biology does nothing to structure human society. Age may enfeeble us all, but cultures vary considerably in the prestige and power they accord to the elderly. Giving birth is a necessary condition for being a mother, but it is not sufficient. We expect mothers to behave in maternal ways and to display appropriately maternal sentiments. We prescribe a clutch of norms or rules that govern the *role* of a mother. That the social role is independent of the biological base can be demonstrated by going back three sentences. Giving birth is certainly not sufficient to be a mother but, as adoption and fostering show, it is not even necessary!

The fine detail of what is expected of a mother or a father or a dutiful son differs from culture to culture, but everywhere behaviour is coordinated by the *reciprocal* nature of roles. Husbands and wives, parents and children, employers and employees, waiters and customers, teachers and pupils, warlords and followers; each makes sense only in its relation to the other. The term 'role' is an appropriate one, because the metaphor of an actor in a play neatly expresses the rule-governed nature or scripted nature of much of social life and the sense that society is a joint production. Social life occurs only because people play their parts (and that is as true for war and conflicts as for peace and love) and those parts make sense only in the context of the overall show. The drama metaphor also reminds us of the artistic licence available to the players. We can play a part straight or, as the following from J.P. Sartre conveys, we can ham it up.

Let us consider this waiter in the cafe. His movement is quick and forward, a little too precise, a little too rapid. He comes towards the patrons with a step a little too quick. He bends forward a little too eagerly; his voice, his eyes express an interest a little too solicitous for the order of the customer. Finally there he returns, trying to imitate in his walk the inflexible stiffness of some kind of automaton while carrying his tray with the recklessness of a tightrope-walker....All his behaviour seems to us a game....But what is he playing? We need not watch long before we can explain it: he is playing at being a waiter in a cafe.

The American sociologist Erving Goffman built an influential body of social analysis on elaborations of the metaphor of social life as drama. Perhaps his most telling point was that it is only through acting out a part that we express character. It is not enough to be evil or virtuous; we have to be seen to be evil or virtuous.

There is distinction between the roles we play and some underlying self. Here we might note that some roles are more absorbing than others. We would not be surprised by the waitress who plays the part in such a way as to signal to us that she is much more than her occupation. We would be surprised and offended by the father who played his part 'tongue in cheek'. Some roles are broader and more far-reaching than others. Describing someone as a clergyman or faith healer would say far more about that person than describing someone as a bus driver.

our patience for the creation of images has also eroded. Children today are used to being tracked from birth by digital cameras and video recorders and they expect to see the results of their poses and performances instantly. The space between life as it is being lived and life as it is being displayed shrinks to a mere second.

- [1] Yet, despite these technical developments, photographs still remain powerful because they are reminders of the people and things we care about.
- [2] Images, after all, are surrogates carried into battle by a soldier or by a traveller on holiday.
- [3] Photographs, be they digital or traditional, exist to remind us of the absent, the beloved, and the dead.
- [4] In the new era of the digital image, the images also have a greater potential for fostering falsehood and trickery, perpetuating fictions that seem so real we cannot tell the difference.
- [5] Anyway, human nature being what it is, little time has passed after photography's invention became means of living life through images.

66. Mma Ramotswe had a detective agency in Africa, at the foot of Kgale Hill. These were its assets: a tiny white van, two desks, two chairs, a telephone, and an old typewriter. Then there was a teapot, in which Mma Ramotswe - the only private lady detective in Botswana - brewed redbush tea. And three mugs - one for herself, one for her secretary, and one for the client. What else does a detective agency really need? Detective agencies rely on human intuition and intelligence, both of which Mma Ramotswe had in abundance.

- [1] But there was also the view, which again would appear on no inventory.
- [2] No inventory would ever include those, of course.
- [3] She had an intelligent secretary too.
- [4] She was a good detective and a good woman.
- [5] What she lacked in possessions was more than made up by a natural shrewdness.

Directions (Qs. 67 to 69): The passage given below is followed by a set of three questions. Choose the **most appropriate** answer to each question.

The difficulties historians face in establishing cause-and-effect relations in the history of human societies are broadly similar to the difficulties facing astronomers, climatologists, ecologists, evolutionary biologists, geologists, and palaeontologists. To varying degrees each of these fields is plagued by the impossibility of performing replicated, controlled experimental interventions, the complexity arising from enormous numbers of variables, the resulting uniqueness of each system, the consequent impossibility of formulating universal laws, and the difficulties of predicting emergent properties and future behaviour. Prediction in history, as in other historical sciences, is most feasible on large spatial scales and over long times, when the unique features of millions of small-scale brief events become averaged out. Just as I could predict the sex ratio of the next 1,000 newborns but not the sexes of my own two children, the historian can recognize factors that made inevitable the broad outcome of the collision between American and Eurasian societies after 13,000 years of separate developments, but not the outcome of the 1960 U.S. presidential election. The details of which candidate said what during a single televised debate in October 1960 could have given the electoral victory to Nixon instead of to Kennedy, but no details of who said what could have blocked the European conquest of Native Americans.

How can students of human history profit from the experience of scientists in other historical sciences? A methodology that has proved useful involves the comparative method and so-called natural experiments. While neither astronomers studying galaxy formation nor human historians can manipulate their systems in controlled laboratory experiments, they both can take advantage of natural experiments, by comparing systems differing in the presence or absence (or in the strong or weak effect) of some putative causative factor. For example, epidemiologists, forbidden to feed large amounts of salt to people experimentally, have still been able to identify effects of high salt intake by comparing groups of humans who already differ greatly in their salt intake; and cultural anthropologists, unable to provide human groups experimentally with varying resource abundances for many centuries, still study long-term effects of

resource abundance on human societies by comparing recent. Polynesian populations living on islands differing naturally in resource abundance.

The student of human history can draw on many more natural experiments than just comparisons among the five inhabited continents. Comparisons can also utilize large islands that have developed complex societies in a considerable degree of isolation (such as Japan, Madagascar, Native American Hispaniola, New Guinea, Hawaii, and many others), as well as societies on hundreds of smaller islands and regional societies within each of the continents. Natural experiments in any field, whether in ecology or human history, are inherently open to potential methodological criticisms. Those include confounding effects of natural variation in additional variables besides the one of interest, as well as problems in inferring chains of causation from observed correlations between variables. Such methodological problems have been discussed in great detail for some of the historical sciences. In particular, epidemiology, the science of drawing inferences about human diseases by comparing groups of people (often by retrospective historical studies), has for a long time successfully employed formalized procedures for dealing with problems similar to those facing historians of human societies.

In short, I acknowledge that it is much more difficult to understand human history than to understand problems in fields of science where history is unimportant and where fewer individual variables operate. Nevertheless, successful methodologies for analyzing historical problems have been worked out in several fields. As a result, the histories of dinosaurs, nebulae, and glaciers are generally acknowledged to belong to fields of science rather than to the humanities.

67. Why do islands with considerable degree of isolation provide valuable insights into human history?
- [1] Isolated islands may evolve differently and this difference is of interest to us.
 - [2] Isolated islands increase the number of observations available to historians.
 - [3] Isolated islands, differing in their endowments and size may evolve differently and this difference can be attributed to their endowments and size.
 - [4] Isolated islands, differing in their endowments and size, provide a good comparison to large islands such as Eurasia, Africa, Americas and Australia.
 - [5] Isolated islands, in so far as they are inhabited, arouse curiosity about how human beings evolved there.
68. According to the author, why is prediction difficult in history?
- [1] Historical explanations are usually broad so that no prediction is possible.
 - [2] Historical outcomes depend upon a large number of factors and hence prediction is difficult for each case.
 - [3] Historical sciences, by their very nature, are not interested in a multitude of minor factors, which might be important in a specific historical outcome.
 - [4] Historians are interested in evolution of human history and hence are only interested in long-term predictions.
 - [5] Historical sciences suffer from the inability to conduct controlled experiments and therefore have explanations based on a few long-term factors.
69. According to the author, which of the following statements would be true?
- [1] Students of history are missing significant opportunities by not conducting any natural experiments.
 - [2] Complex societies inhabiting large islands provide great opportunities for natural experiments.
 - [3] Students of history are missing significant opportunities by not studying an adequate variety of natural experiments.
 - [4] A unique problem faced by historians is their inability to establish cause and effect relationships.
 - [5] Cultural anthropologists have overcome the problem of confounding variables through natural experiments.
-

Directions (Qs. 70 to 72): 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 grammar and usage. Then, choose the **most appropriate** option.

70.

- A. When I returned to home, I began to read
- B. everything I could get my hand on about Israel.
- C. That same year Israel's Jewish Agency sent
- D. a *Shaliach* a soil of recruiter to Minneapolis.
- E. I became one of his most active devotees.

[1] B, C & E

[2] C only

[3] E only

[4] C & B

[5] C, D & E

71.

- A. So once an economy is actually in recession,
- B. the authorities can, in principle, move the economy
- C. out of slump - assuming hypothetically.
- D. that they know how to - by a temporary stimuli.
- E. In the longer term, however, such policies have no affect on the overall behaviour of the economy.

[1] A, B & E

[2] B, C & B

[3] C & D

[4] E only

[5] B only

72.

- A. It is sometimes told that democratic
- B. government originated in the city-states
- C. of ancient Greece. Democratic ideals have been handed to us from that time.
- D. hi truth, however, this is an unhelpful assertion.
- E. The Greeks gave us the word, hence did not provide us with a model.

[1] A, B & D

[2] B, C & D

[3] B & D

[4] B only

[5] D only

Directions (Qs. 73 to 75): The passage given below is followed by a set of three questions. Choose the **most appropriate** answer to each question.

To discover the relation between rules, paradigms, and normal science, consider first how the historian isolates the particular loci of commitment that have been described as accepted rules. Close historical investigation of a given specialty at a given time discloses a set of recurrent and quasi-standard illustrations of various theories in (Jicir conceptual, observational, and instrumental applications. These are the community's paradigms, revealed in its textbooks, lectures, and laboratory exercises. By studying them and by practicing with them, the members of (lie corresponding community learn their trade. The historian, of course, will discover in addition a penumbral area occupied by achievements whose status is still in doubt, but the core of solved problems and techniques will usually be clear. Despite occasional ambiguities, the paradigms of a mature scientific community can be determined with relative ease.

That demands a second step and one of a somewhat different kind. When undertaking it, the historian must compare (he community's **paradigms** with each other and with its current research reports. In doing so, his object: is to discover what isolable elements, explicit or implicit, the members of that community may have abstracted from their more global paradigms and deploy it as rules in their research. Anyone who has attempted to describe or analyze the evolution of a particular scientific tradition will necessarily have sought accepted principles and rules of this sort. Almost certainly, he will have met with at least partial success. But, if his experience has been at all like my own, he will have found the search for rules both more difficult and less satisfying (ban the search for paradigms. Some of the generalizations he employs to describe the community's shared beliefs will present more problems. Others, however, will

seem a shade too strong. Phrased in just that way, or in any other way he can imagine, they would almost certainly have been rejected by some members of the group he studies. Nevertheless, if the coherence of the research tradition is to be understood in terms of rules, some specification of common ground in the corresponding area is needed. As a result, the search for a body of rules competent to constitute a given normal research tradition becomes a source of continual and deep frustration.

Recognizing that frustration, however, makes it possible to diagnose its source. Scientists can agree (hat a Newton, Lavoisier, Maxwell, or Einstein has produced an apparently permanent solution to a group of outstanding problems and still disagree, sometimes without being aware of it, about (he particular abstract characteristics that make those solutions permanent. They can, that is, agree in their identification of a paradigm without agreeing on, or even attempting to produce, a full interpretation or rationalization of it. Lack of a standard **interpretation** or of an agreed reduction to rules will not prevent a paradigm from guiding research. Normal science can be determined in part by the direct inspection of paradigms, a process (hat is often aided by but does not depend upon the formulation of rules and assumption. Indeed, the existence of a paradigm need not even imply that any full set of rules exists.

73. What is the author attempting to illustrate through this passage?
- [1] Relationships between-rules, paradigms, and normal science
 - [2] How a historian would isolate a particular 'loci of commitment'
 - [3] How a set of shared beliefs evolves into a paradigm
 - [4] Ways of understanding a scientific tradition
 - [5] The frustrations of attempting to define a paradigm of a tradition
74. The term 'loci of commitment' as used in the passage would most likely correspond with which of the following?
- [1] Loyalty between a group of scientists in a research laboratory
 - [2] Loyalty between groups of scientists across research laboratories
 - [3] Loyalty to a certain paradigm of scientific inquiry
 - [4] Loyalty to global patterns of scientific inquiry
 - [5] Loyalty to evolving trends of scientific inquiry
75. The author of this passage is likely to agree with which of the following?
- [1] Paradigms almost entirely define a scientific tradition.
 - [2] A group of scientists investigating a phenomenon would benefit by defining a set of rules.
 - [3] Acceptance by the giants of a tradition is a *sine qua non* for a paradigm to emerge.
 - [4] Choice of isolation mechanism determines the type of paradigm that-may emerge from a tradition.
 - [5] Paradigms are a general representation of rules and beliefs of a scientific tradition.

