CAT 2002 Question Paper

Common Admission Test · Indian Institutes of Management

Time Allowed: 2 Hours **150 Questions**

General Instructions

(i) This paper contains **150 questions** from **CAT 2002**. The original examination was a **paper-based test** with a **120-minute** duration.

(ii) The question groups appear in their original sequence: **Data Interpretation** (50 questions); **Quantitative Ability** (50 questions); **Verbal Ability and Reading Comprehension** (50 questions).

(iii) Each question has **four choices**. Select the single best answer, using the shared passage, table or diagram wherever indicated.

(iv) Read the directions for every question group carefully. Question numbers continue across the paper.

(v) Passages and questions may continue onto the following page. Read each question and all its choices before answering.

Data Interpretation · Questions 1-50

1. Four students — Ashish, Dhanraj, Felix and Sameer sat for the Common Entrance Exam for Management (CEEM). Each of the students has one profession among the four: Doctor, Chartered Accountant, Engineer, and Economist. One student got admission offers from three NIMs (National Institutes of Management), another from two NIMs, the third from one NIM, while the fourth got none. Below are some of the facts about who got admission offers from how many NIMs and what is their educational background. I. The one who is an engineer didn't get as many admissions as Ashish. II. The one who got the offer for admissions in two NIMs isn't Dhanraj nor is he a chartered accountant. III. Sameer is an economist. IV. Dhanraj isn't an engineer and received more admission offers than Ashish. V. The doctor got the most number of admission offers. Which one of the following statements is necessarily true?

(A) Ashish is a chartered accountant and got offer for admission in three NIMs.

(B) Dhanraj is a doctor and got admission offer in one NIM.

(C) Sameer is an economist who got admission offers in two NIMs.

(D) Felix who is not an engineer did not get any offer for admission.

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2. Five boys went to a store to buy sweets. One boy had Rs. 40. Another boy had Rs. 30. Two other boys had Rs. 20 each. The remaining boy had Rs. 10. Below are some more facts about the initial and final cash positions. I. Alam started with more than Jugraj. II. Sandeep spent Rs. 1.50 more than Daljeet. III. Ganesh started with more money than just only one other person. IV. Daljeet started with 2/3 of what Sandeep started with. V. Alam spent the most, but did not end with the least. VI. Jugraj spent the least and ended with more than Alam or Daljeet. VII.Ganesh spent Rs.3.50. VIII. Alam spent 10 times than what Ganesh did. In the choices given below, all statements except one are false. Which one of the following statements can be true?

(A) Alam started with Rs. 40 and ended with Rs. 9.50

(B) Sandeep started with Rs. 30 and ended with Re. 1

(C) Ganesh started with Rs. 20 and ended with Rs. 4

(D) Jugraj started with Rs. 10 and ended with Rs. 7

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3. In a hospital there were 200 diabetes, 150 hyperglycaemia and 150 gastro-enteritis patients. Of these, 80 patients were treated for both diabetices and hyperglycaemia. Sixty patients were treated for gastro-enteritis and hyperglycaemia, while 70 were treated for diabetes and gastroenteritis. Some of these patients have all the three diseases. Dr. Dennis treats patients with only gastro-enteritis. Dr. Paul is a generalist. Therefore, he can treat patients with multiple diseases. Patients always prefer a specialist for their disease. If Dr. Dennis had 80 patients, then the other three doctors can be arranged in terms of the number of patients treated as:

(A) Paul > Gerard > Hormis

(B) Paul > Hormis > Gerard

(C) Gerard > Paul > Hormis

(D) Cannot be determined

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4. Three children won the prizes in the Bournvita Quiz contest. They are from the schools: Loyola, Convent and Little Flowers, which are located at different cities. Below are some of the facts about the schools, the children and the city they are from. I. One of the children is Bipin. II. Loyola School's contestant did not come first. III. Little Flower's contestant was named Riaz. IV. Convent School is not in Hyderabad. V. The contestant from Pune is not from Loyola School. VI. The contestant from Bangalore did not come first. VII. Convent School's contestant's name is not Balbir. VIII. The contestant from Pune came

in third. Which of the following statements is true?

(A) 1st prize: Riaz (Little Flowers), 2nd prize: Bipin (Convent), 3rd prize: Balbir (Loyola)

(B) 1st prize: Bipin (Convent), 2nd prize: Riaz (Little Flowers), 3rd prize: Balbir (Loyola)

(C) 1st prize: Riaz (Little Flowers), 2nd prize: Balbir (Loyola), 3rd prize: Bipin (Convent)

(D) 1st prize: Bipin (Convent), 2nd prize: Balbir (Loyola), 3rd prize: Riaz (Litttle Flowers)

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5. Two boys are playing on a ground. Both the boys are less than 10 years old. Age of the younger boy is equal to the cube root of the product of the age of the two boys. If we place the digit representing the age of the younger boy to the left of the digit representing the age of the elder boy, we get the age of father of the younger boy. Similarly, if we place the digit representing the age of the elder boy to the left of the digit representing the age of the younger boy and divide the figure by 2, we get the age of mother of the younger boy. The mother of the younger boy is younger to his father by 3 years. Then, what is the age of the younger boy?

(A) 3

(B) 4

(C) 2

(D) None of these

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6. Flights A and B are scheduled from an airport within the next one hour. All the booked passengers of the two flights are waiting in the boarding hall after check-in. The hall has a seating capacity of 200, out of which 10% remained vacant. 40% of the waiting passengers are ladies. When boarding announcement came, passengers of flight A left the hall and boarded the flight. Seating capacity of each flight is two-third of the passengers who waited in the waiting hall for both the flights put together. Half the passengers who boarded flight A are women. After boarding for flight A, 60% of the waiting hall seats became empty. For every twenty of those who are still waiting in the hall for flight B, there is one air hostess in flight A. What is the ratio of empty seats in flight B to the number of air hostesses in flight A?

(A) 10 : 1

(B) 5 : 1

(C) 20 : 1

(D) 1 : 1

Questions 7 to 10

A country has the following types of traffic signals.

3 red lights = stop

2 red lights = turn left

1 red light = turn right

3 green lights = go at 100 km/hr speed

2 green lights = go at 40 km/hr speed

1 green light = go at 20 km/hr speed

A motorist starts at a point on a road and follows all traffic signals. His car is heading towards the north. He encounters the following signals (the time mentioned in each case below is applicable after crossing the previous signal).

Starting point - 1 green light

After half an hour, 1st signal - 2 red and 2 green lights

After 15 min, 2nd signal - 1 red light

After half an hour, 3rd signal - 1 red and 3 green lights

After 24 min, 4th signal - 2 red and 2 green lights

After 15 min, 5th signal - 3 red lights

7. The total distance travelled by the motorist from the starting point till the last signal is

(A) 90 km

(B) 100 km

(C) 120 km

(D) None of these

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8. What is the position (radial distance) of the most motorist when he reaches the last signal?

(A) 45 km directly north of the starting point

(B) 30 km directly to the east of the starting point

(C) 50 km away to the north-east of the starting point

(D) 45 km away to the north-west of the starting point

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9. After the starting point if the 1st signal were 1 red and 2 green lights, what would be the final position of the motorist?

(A) 30 km to the west and 20 km to the south

(B) 30 km to the west and 40 km to the north

(C) 50 km to the east and 40 km to the north

(D) Directly 30 km to the east

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10. If at the starting point, the car was heading towards south, what would be the final position of the motorist?

(A) 30 km to the east and 40 km to the south

(B) 50 km to the east and 40 km to the south

(C) 30 km to the west and 40 km to the south

(D) 50 km to the west and 20 km to the north

Questions 11 to 13

The following table provides data on the different countries and location of their capitals. (the data may not match the actual Latitude, Longitudes) Answer the following questions on the basis of this table.

S. No.	Country	Capital	Latitude	Longitude
1	Argentina	Buenos Aires	34.30 S	58.20 E
2	Australia	Canberra	35.15 S	149.08 E
3	Austria	Vienna	48.12 N	16.22 E
4	Bulgaria	Sofia	42.45 N	23.20 E
5	Brazil	Brasilia	15.47 S	47.55 E
6	Canada	Ottawa	45.27 N	75.42 E
7	Cambodia	Phnom Penh	11.33 N	104.55 E
8	Equador	Quito	0.15 S	78.35 E
9	Ghana	Accra	5.35 N	0.6 E
10	Iran	Teheran	35.44 N	51.30 E
11	Ireland	Dublin	53.20 N	6.18 E
12	Libya	Tripoli	32.49 N	13.07 E
13	Malaysia	Kuala Lumpur	3.9 N	101.41 E
14	Peru	Lima	12.05 S	77.0 E
15	Poland	Warsaw	52.13 N	21.0 E
16	New Zealand	Wellington	41.17 S	174.47 E
17	Saudi Arabia	Riyadh	24.41 N	46.42 E
18	Spain	Madrid	40.25 N	3.45 W
19	Sri Lanka	Colombo	6.56 N	79.58 E
20	Zambia	Lusaka	15.28 S	28.16 E

11. What percentage of cities located within 10 E° and 40 E° (10° East and 40° East) lie in the Southern Hemisphere?

(A) 15%
(B) 20%
(C) 25%
(D) 30%

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12. The number of cities whose names begin with a consonant and are in the Northern Hemisphere in the table

(A) exceeds the number of cities whose names begin with a consonant and are in the southern hemisphere by 1

(B) exceeds the number of cities whose names begin with a consonant and are in the southern hemisphere by 2

(C) is less than the number of cities whose names begin with a consonant and are in the east of the meridian by 1

(D) is less than the number of countries whose name begins with a consonant and are in the east of the meridian by 2

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13. The ratio of the number of countries whose name starts with vowels and located in the southern hemisphere, to the number of countries, the name of whose capital cities starts with a vowel in the table above is

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

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14. In a hockey match, the Indian team was behind by 2 goals with 5 min remaining. Did they win the match? A. Deepak Thakur, the Indian striker, scored 3 goals in the last 5 min of the match. B. Korea scored a total of 3 goals in the match.

(A) The question can be answered by one of the statement alone but not by the other.

(B) The question can be answered by using either statement alone.

(C) The question can be answered by using both the statements together, but cannot be answered by using either statement alone.

(D) The question cannot be answered by either of the statements.

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15. Four students were added to a dance class. Would the teacher be able to divide her students evenly into a dance team (or teams) of 8? A. If 12 students were added, the teacher could put everyone in teams of 8 without any leftovers. B. The number of students in the class earlier was not divisible by 8.

(A) The question can be answered by one of the statement alone but not by the other.

(B) The question can be answered by using either statement alone.

(C) The question can be answered by using both the statements together, but cannot be answered by using either statement alone.

(D) The question cannot be answered by either of the statements.

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16. Is $x = y$? A. $(x + y)(1/x + 1/y) = 4$ B. $(x - 50)^2 = (y - 50)^2$

(A) The question can be answered by one of the statement alone but not by the other.

(B) The question can be answered by using either statement alone.

(C) The question can be answered by using both the statements together, but cannot be answered by using either statement alone.

(D) The question cannot be answered by either of the statements.

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17. A dress was initially listed at a price that would have given the store a profit of 20% of the wholesale cost. What was the wholesale cost of the dress? A. After reducing the listed price by 10%, the dress sold for a net profit of $10. B. The dress is sold for $50.

(A) The question can be answered by one of the statement alone but not by the other.

(B) The question can be answered by using either statement alone.

(C) The question can be answered by using both the statements together, but cannot be answered by using either statement alone.

(D) The question cannot be answered by either of the statements.

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18. Is 500 the average (arithmetic mean) score in the GMAT? A. Half of the people who take the GMAT score above 500 and half of the people score below 500. B. The highest

GMAT score is 800 and the lowest score is 200.

(A) The question can be answered by one of the statement alone but not by the other.

(B) The question can be answered by using either statement alone.

(C) The question can be answered by using both the statements together, but cannot be answered by using either statement alone.

(D) The question cannot be answered by either of the statements.

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19. Is $|x - 2| < 1$? A. $|x| < 1$ B. $|x - 1| < 2$

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

(B) if the question can be answered by one of the statement alone but not by the other.

(C) if the question can be answered by using both the statements together, but cannot be answered by using either statement alone.

(D) if the question cannot be answered by either of the statements.

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20. People in a club either speak French or Russian or both. Find the number of people in a club who speak only French. A. There are 300 people in the club and the number of people who speak both French and Russian is 196. B. The number of people who speak only Russian is 58.

(A) if the question can be answered by one of the statement alone but not by the other.

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

(C) if the question can be answered by using both the statements together, but cannot be answered by using either statement alone.

(D) if the question cannot be answered by either of the statements.

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21. A sum of Rs. 38,500 was divided among Jagdish, Punit and Girish. Who received the minimum amount? A. Jadgish received 2/9 of what Punit and Girish received together. B. Punit received 3/11 of what Jadgish and Girish received together.

(A) if the question can be answered by one of the statement alone but not by the other.

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

(C) if the question can be answered by using both the statements together, but cannot be answered by using either statement alone.

(D) if the question cannot be answered by either of the statements.

Questions 22 to 25

The following table gives details regarding the total earnings of 15 employees and the number of days they have worked on complex, medium and simple operation in the month of June 2002. Even though the employees might have worked on an operation, they would be eligible for earnings only if they have minimum level of efficiency.

	Total Earning				Total Days			
Emp No.	Complex	Medium	Simple	Total	Complex	Medium	Simple	Total
2001147	82.98		636.53	719.51	3	0	23	26
2001148	51.53		461.73	513.26	3.3	1.67	16	21
2001149	171.10		79.10	250.81	5.5	4	8.5	18
2001150	100.47		497.47	597.95	6	4.67	7.33	18
2001151	594.43	159.64		754.06	9.67	13.33	0	23
2001156	83.70			89.70	8	0	1	9
2001158	472.31	109.73		582.04	1.39	9.61	0	11
2001164	402.25	735.22	213.67	1351.14	5.27	12.07	0.67	18
2001170	576.57			576.57	21	0	0	21
2001171	286.47	6.10		292.57	8.38	4.25	0.38	13
2001172	512.10	117.46		629.56	10	8.5	3.5	22
2001173	1303.88			1303.88	25.5	0	0.5	26
2001174	1017.94			1017.9	26	0	0	26
2001179	46.56	776.19		822.75	2	19	0	21
2001180	116.40	1262.79		1379.19	5	19	0	24

22. The number of employees who have earned more than Rs. 50 per day in complex operations is

(A) 4
(B) 3
(C) 5
(D) 6

23. The number of employees who have earned more than Rs. 600 and having more than 80% attendance (there are 25 regular working days in June 2002; some might be coming on overtime too) is

(A) 4
(B) 5
(C) 6
(D) 7

24. The employee number of the person who has earned the maximum earnings per day in medium operation is

(A) 2001180
(B) 2001164
(C) 2001172
(D) 2001179

25. Among the employees who were engaged in complex and medium operations, the number of employees whose average earning per day in complex operations is more than average earning per day in medium operations is

(A) 2
(B) 3
(C) 5
(D) 8

Questions 26 to 33

The following table shows the revenue and expenses in millions of Euros (European currency) associated with REPSOL YPF company's oil and gas producing activities in operations in different parts of the world for 1998-2000.

S. No.	Item	Year	Total World	Spain	North Africa & Middle East	Argentina	Rest of Latin America	Far East	North Sea	Rest of the World
1	Revenue	1998	916	70	366	281	34	82	78	5
		1999	3374	55	666	2006	115	301	140	91
		2000	8328	394	1290	5539	482	603	0	20
2	Expenses	1998	668	39	255	187	57	63	52	15
		1999	1999	48	325	1168	131	204	65	58
		2000	3709	43	530	2540	252	311	0	33
3	Income Before Taxes & Charges (Revenue - Expenses)	1998	248	31	111	94	–23	19	26	–10
		1999	1375	7	341	838	–16	97	75	33
		2000	4619	351	760	2999	230	292	0	–13
4	Taxes and Charges	1998	152	6	104	33	–3	9	6	–3
		1999	561	3	169	338	–6	39	21	–3
		2000	1845	126	404	1150	61	103	0	1
5	Net Income = (3)-(4)	1998	96	25	7	61	–20	10	20	–7
		1999	814	4	172	500	–10	58	54	36
		2000	2774	225	356	1849	169	189	0	–14

26. How many operations (Spain, North Africa and Middle East,..) of the company accounted for less than 5% of the total revenue earned in 1999?

(A) 2
(B) 3
(C) 4
(D) None of these

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27. How many operations (Spain, North Africa and Middle East…) of the company witnessed more than 200% increase in revenue from 1999 to 2000?

(A) 1
(B) 2
(C) 3
(D) None of these

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28. How many operations registered a sustained yearly increase in income before taxes and charges from 1998 to 2000?

(A) 3
(B) 4
(C) 5
(D) None of these

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29. Ignoring the loss making operations of the company in 1998, for how many operations was the percentage increase in net income before taxes and charges higher than the average from 1998 to 1999?

(A) 0
(B) 1
(C) 2
(D) None of these

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30. If profitability is defined as the ratio of net income after taxes and charges to expense, which of the following statements is true?

(A) The Far East operations witnessed its highest profitability in 1998
(B) The North Sea operations increased its profitability from 1998 to 1999
(C) The operations in Argentina witnessed a decrease in profitability from 1998 to 1999
(D) Both 2 and 3 are true

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31. In 2000, which among the following countries had the best profitability?

(A) North Africa and Middle East
(B) Spain
(C) Rest of Latin America
(D) Far East

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32. If efficiency is defined as the ratio of revenue to expenses, which operation was the least efficient in 2000?

(A) Spain
(B) Argentina
(C) Far East
(D) None of these

33. Of the following statements, which one is not true?

(A) The operations in Spain had the best efficiency in 2000

(B) The Far East operations witnessed an efficiency improvement from 1999 to 2000

(C) The North Sea operations witnessed an efficiency improvement from 1998 to 1999

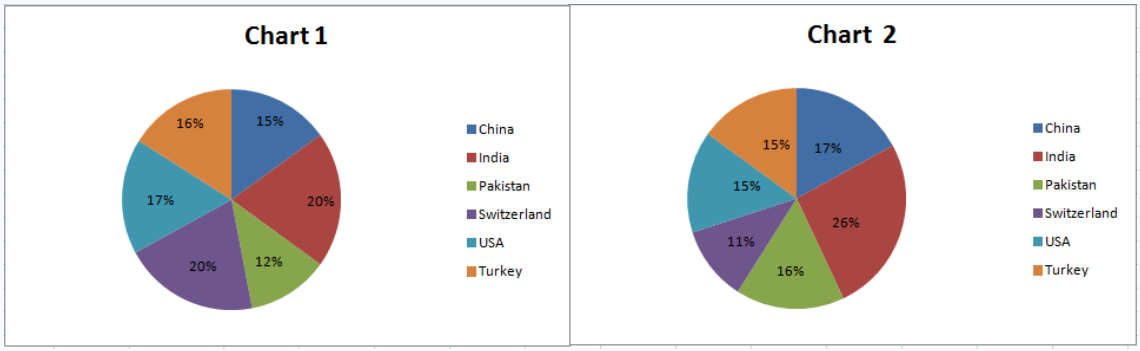
(D) In 1998, the operations in Rest of Latin America were the least efficient

Questions 34 to 35

Chart 1 shows the distribution by value of top 6 suppliers of MFA Textiles in 1995.

Chart 2 shows the distribution by quantity of top 6 suppliers of MFA Textiles in 1995.

The total value is 5760 million Euro (European currency). The total quantity is 1.055 million tonnes.



34. The country which has the highest average price is

(A) USA
(B) Switzerland
(C) Turkey
(D) India

35. The average price in Euro per kilogram for Turkey is roughly

(A) 6.20
(B) 5.60
(C) 4.20
(D) 4.80

Questions 36 to 41

There are 6 refineries, 7 depots and 9 districts. The refineries are BB, BC, BD, BE, BF and BG. The depots are AA, AB, AC, AD, AE, AF and AG. The districts are AAA, AAB, AAC, AAD, AAE, AAF, AAG, AAH, and AAI. Table A gives the cost of transporting one unit from refinery to depot. Table B gives the cost of transporting one unit from depot to a district.

Table A							
	BB	BC	BD	BE	BF	BG	
AA	928.2	537.2	567.8	589.9	800.1	323.4	
AB	311.8	595.7	885.7	759.9	793.1	420.1	
AC	451.1	0	320.1	720.1	1000.1	404.5	
AD	371.1	50.1	350.1	650.4	980.1	525.3	
AE	1137.3	314.5	0	1157.7	406.3	617.5	
AF	617.1	516.8	756.5	1065.9	623.9	509.4	
AG	644.3	299.2	537.2	1093.1	725.8	827.4	
Table B							
	AA	AB	AC	AD	AE	AF	AG
AAA	571.1	205	352	159	434.5	178	337
AAB	200	337.5	291	201	0	980.7	434
AAC	100	0	275	277	850	770.5	835
AAD	0	415.7	350	760	300	560	444.7
AAE	223.5	300	440	1033	880	325	526.5
AAF	577.5	725	443.5	560	1035.3	570	530
AAG	340	410.6	886.7	0	800.7	680.5	800
AAH	627	556.5	1023	1024	759	1025.7	300
AAI	439	738	980	1031.7	1024	900	757

36. What is the least cost of sending one unit from any refinery to any district?

(A) 95.2
(B) 0
(C) 205.7
(D) 284.5

37. What is the least cost of sending one unit from any refinery to the district AAB?

(A) 0
(B) 284.5
(C) 95.2
(D) None of these

38. What is the least cost of sending one unit from refinery BB to any district?

(A) 284.5
(B) 311.8
(C) 451.1
(D) None of these

39. What is the least cost of sending petrol from refinery BB to district AAA?

(A) 765.6
(B) 1137.3
(C) 1154.3
(D) None of these

40. How many possible ways are there for sending petrol from any refinery to any district?

(A) 63
(B) 42
(C) 54
(D) 378

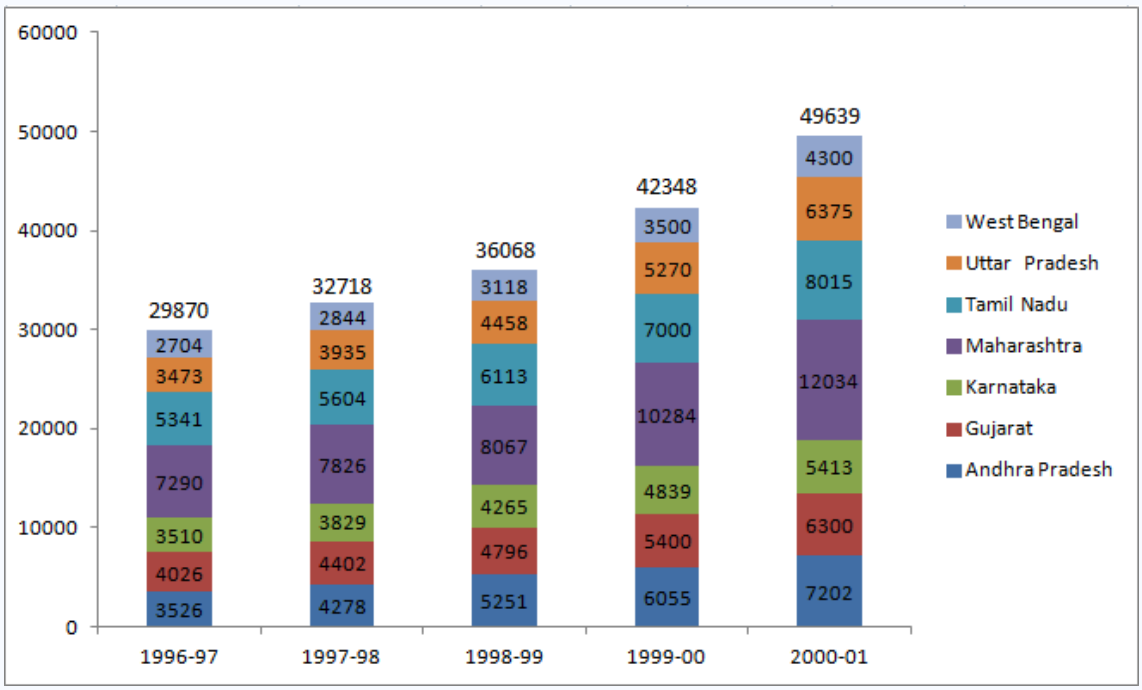
41. The largest cost of sending petrol from any refinery to any district is

(A) 2172.6
(B) 2193.0
(C) 2091.0
(D) None of these

Questions 42 to 47

The chart given below indicates the annual sales tax revenue collections (in rupees in crores) of seven states from 1997 to 2001.

The values given at the top of each bar represents the total collections in that year



42. If for each year, the states are ranked in terms of the descending order of sales tax collections, how many states do not change the ranking more than once over the five years?

(A) 1
(B) 5
(C) 3
(D) 4

43. Which of the following states has changed its relative ranking most number of times when you rank the states in terms of the descending volume of sales tax collections each year?

(A) Andhra Pradesh
(B) Uttar Pradesh
(C) Karnataka
(D) Tamil Nadu

44. The percentage share of sales tax revenue of which state has increased from 1997 to 2001?

(A) Tamil Nadu
(B) Karnataka
(C) Gujarat
(D) Andhra Pradesh

45. Which pair of successive years shows the maximum growth rate of tax revenue in Maharashtra?

(A) 1997 to 1998
(B) 1998 to 1999
(C) 1999 to 2000
(D) 2000 to 2001

46. Identify the state whose tax revenue increased exactly by the same amount in two successive pair of years?

(A) Karnataka
(B) West Bengal
(C) Uttar Pradesh
(D) Tamil Nadu

47. Which state below has been maintaining a constant rank over the years in terms of its contribution to total tax collections?

(A) Andhra Pradesh
(B) Karnataka
(C) Tamil Nadu
(D) Uttar Pradesh

Questions 48 to 50

The table below gives information about four different crops, their different quality, categories and the regions where they are cultivated. Based on the information given in the table answer the questions below.

Type of Crop	Quality	Region
Crop - 1	High	R1, R2, R3, R4, R5
	Medium	R6, R7, R8
	Low	R9, R10, R11
Crop - 2	High	R5, R8, R12
	Medium	R9, R13
	Low	R6, R7, R8
Crop - 3	High	R2, R6, R7. R13
	Medium	R3, R9, R11
	Low	R1, R4
Crop - 4	High	R3, R10, R11
	Medium	R1, R2, R4
	Low	R5, R9

48. How many regions produce medium qualities of Crop-1 or Crop-2 and also produce low quality of Crop-3 or Crop-4?

(A) Zero
(B) One
(C) Two
(D) Three

49. Which of the following statements is true?

(A) All medium quality Crop-2 producing regions are also high quality Crop-3 producing regions.
(B) All high quality Crop-1 producing regions are also medium and low Crop-4 producing regions.
(C) There are exactly four Crop-3 producing regions, which also produce Crop-4 but not Crop-2.

(D) Some Crop-3 producing regions produce Crop-1, but not high quality Crop-2.

50. How many low quality Crop-1 producing regions are either high quality Crop-4 producing regions or medium quality Crop-3 producing regions?

(A) One

(B) Two

(C) Three

(D) Zero

51. If there are 10 positive real numbers $n_1 < n_2 < n_3 ... < n_{10}$, how many triplets of these numbers $(n_1, n_2, n_3), (n_2, n_3, n_4)$ can be generated such that in each triplet the first number is always less than the second number, and the second number is always less than the third number?

(A) 45
(B) 90
(C) 120
(D) 180

52. In triangle ABC, the internal bisector of $\angle A$ meets BC at D. If AB = 4, AC = 3 and $\angle A = 60°$, then the length of AD is

(A) $2\sqrt{3}$
(B) $\frac{12\sqrt{3}}{7}$
(C) $\frac{15\sqrt{3}}{8}$
(D) $\frac{6\sqrt{3}}{7}$

53. The length of the common chord of two circles of radii 15 cm and 20 cm, whose centres are 25 cm apart, is

(A) 24 cm
(B) 25 cm
(C) 15 cm
(D) 20 cm

54. If $f(x) = \log \frac{(1+x)}{(1-x)}$, then f(x) + f(y) is

(A) $f(x+y)$
(B) $f\frac{(x+y)}{(1+xy)}$
(C) $(x+y)f\frac{1}{(1+xy)}$
(D) $\frac{f(x)+f(y)}{(1+xy)}$

55. Four horses are tethered at four corners of a square plot of side 14 m so that the adjacent horses can just reach one another. There is a small circular pond of area 20 m^2 at the centre. Find the ungrazed area.

(A) $22m^2$
(B) $42m^2$
(C) $84m^2$
(D) $168m^2$

56. On a straight road XY, 100 m long, five heavy stones are placed 2 m apart beginning at the end X. A worker, starting at X, has to transport all the stones to Y, by carrying only one stone at a time. The minimum distance he has to travel is

(A) 472 m
(B) 422 m
(C) 744 m
(D) 860 m

57. In the figure given below, ABCD is a rectangle. The area of the isosceles right triangle ABE = 7 cm^2 ; EC = 3(BE). The area of ABCD (in cm^2) is



(A) 21 cm^2
(B) 28 cm^2
(C) 42 cm^2
(D) 56 cm^2

---

58. The area of the triangle whose vertices are (a,a), (a + 1, a + 1) and (a + 2, a) is

(A) a^3
(B) 1
(C) $2a$
(D) $2^{1/2}$

---

59. Instead of walking along two adjacent sides of a rectangular field, a boy took a short cut along the diagonal and saved a distance equal to half the longer side. Then the ratio of the shorter side to the longer side is

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

---

60. Only a single rail track exists between stations A and B on a railway line. One hour after the north-bound super fast train N leaves station A for station B, a south-bound passenger train S reaches station A from station B. The speed of the super fast train is twice that of a normal express train E, while the speed of a passenger train S is half that of E. On a particular day, N leaves for B from A, 20 min behind the normal schedule. In order to maintain the schedule, both N and S increased their speeds. If the super fast train doubles its speed, what should be the ratio (approximately) of the speeds of passenger train to that of the super fast train so that the passenger train S reaches exactly at the scheduled time at A on that day?

(A) 1 : 3
(B) 1 : 4
(C) 1 : 5
(D) 1 : 6

---

61. On a 20 km tunnel, connecting two cities A and B, there are three gutters (1, 2 and 3). The distance between gutters 1 and 2 is half the distance between gutters 2 and 3. The distance from city A to its nearest gutter, gutter 1, is equal to the distance of city B from gutter 3. On a particular day, the hospital in city A receives information that an accident has happened at gutter 3. The victim can be saved only if an operation is started within 40 min. An ambulance started from city A at 30 km/hr and crossed gutter 1 after 5 min. If the driver had doubled the speed after that, what is the maximum amount of time would the doctor get to attend to the patient at the hospital. Assume that a total of 1 min is elapsed for taking the patient into and out of the ambulance?

(A) 4 min
(B) 2.5 min
(C) 1.5 min
(D) The patient died before reaching the hospital

---

62. Number S is obtained by squaring the sum of digits of a two-digit number D. If difference between S and D is 27, then the two-digit number D is

(A) 24
(B) 54
(C) 34
(D) 45

---

63. The nth element of a series is represented as $X_n = (-1)^n X_{n-1}$ If $X_0 = x$ and $x > 0$, then which of the following is always true?

(A) X_n is positive if n is even
(B) X_n is positive if n is odd
(C) X_n is negative if n is even
(D) None of these

---

64. If x, y and z are real numbers such that x + y + z = 5 and xy + yz + zx = 3, what is the largest value that x can have?

(A) 5/3
(B) $\sqrt{19}$
(C) 13/3
(D) None of these

---

65. Neeraj has agreed to mow a lawn, which is a 20 m × 40 m rectangle. He mows it with 1 m wide strip. If Neeraj starts at one corner and mows around the lawn toward the centre, about how many times would he go round before he has mowed half the lawn? (Round off the answer to two decimal digits)

(A) 2.5
(B) 3.5
(C) 3.75
(D) None of these

---

66. The owner of a local jewellery store hired three watchmen to guard his diamonds, but a thief still got in and stole some diamonds. On the way out, the thief met each watchman, one at a time. To each he gave 1/2 of the diamonds he had then, and 2 more besides. He escaped with one diamond. How many did he steal originally?

(A) 40
(B) 36
(C) 25
(D) None of these

---

67. Mayank, Mirza, Little and Jaspal bought a motorbike for $60. Mayank paid one-half of the sum of the amounts paid by the other boys. Mirza paid one-third of the sum of the amounts paid by the other boys. Little paid one-fourth of the sum of the amounts paid by the other boys. How much did Jaspal have to pay?

(A) $15
(B) $13
(C) $17
(D) None of these

---

68. A rich merchant had collected many gold coins. He did not want anybody to know about him. One day, his wife asked, " How many gold coins do we have?" After a brief pause, he replied, "Well! if I divide the coins into two unequal numbers, then 48 times the difference between the two numbers equals the difference between the squares of the two numbers." The wife looked puzzled. Can you help the merchant's wife by finding out how many gold coins the merchant has?

(A) 96
(B) 53
(C) 43
(D) None of these

---

69. Shyam visited Ram during his brief vacation. In the mornings they both would go for yoga. In the evenings they would play tennis. To have more fun, they indulge only in one activity per day, i.e. either they went for yoga or played tennis each day. There were days when they were lazy and stayed home all day long. There were 24 mornings when they did nothing, 14 evenings when they stayed at home, and a total of 22 days when they did yoga or played tennis. For how many days Shyam stayed with Ram?

(A) 32
(B) 24
(C) 30
(D) None of these

---

70. Let S denotes the infinite sum $2 + 5x + 9x^2 + 14x^3 + 20x^4 + \ldots$, where $|x| < 1$ and the coefficient of x^{n-1} is n(n + 3)/2 , (n = 1, 2 , . . .) . Then S equals:

(A) $(2 - x)/(1 - x)^3$
(B) $(2 - x)/(1 + x)^3$
(C) $(2 + x)/(1 - x)^3$
(D) $(2 + x)/(1 + x)^3$

---

71. If $x^2 + 5y^2 + z^2 = 2y(2x + z)$, then which of the following statements is(are) necessarily true? A. x = 2y B. x = 2z C. 2x = z

(A) Only A
(B) B and C
(C) A and B
(D) None of these

---

72. Amol was asked to calculate the arithmetic mean of 10 positive integers, each of which had 2 digits. By mistake, he interchanged the 2 digits, say a and b, in one of these 10 integers. As a result, his answer for the arithmetic mean was 1.8 more than what it should have been. Then |b - a| equals

(A) 1
(B) 2
(C) 3
(D) None of these

---

73. A car rental agency has the following terms. If a car is rented for 5 hr or less, then, the charge is Rs. 60 per hour or Rs. 12 per kilometre whichever is more. On the other hand, if the car is rented for more than 5 hr, the charge is Rs. 50 per hour or Rs. 7.50 per kilometre whichever is more. Akil rented a car from this agency, drove it for 30 km and ended up playing Rs. 300. For how many hours did he rent the car?

(A) 4 hr
(B) 5 hr
(C) 6 hr
(D) None of these

---

74. A child was asked to add first few natural numbers (i.e. 1 + 2 + 3 + …) so long his patience permitted. As he stopped, he gave the sum as 575. When the teacher declared the result wrong, the child discovered he had missed one number in the sequence during addition. The number he missed was

(A) less than 10
(B) 10
(C) 15
(D) more than 15

---

75. Suppose for any real number x, [x] denotes the greatest integer less than or equal to x. Let L(x, y) = [x] + [y] + [x + y] and R(x, y) = [2x] + [2y]. Then it is impossible to find any two positive real numbers x and y for which

(A) L(x, y) = R(x, y)
(B) L(x, y) $\neq$ R(x, y)
(C) L(x, y) < R(x, y)
(D) L(x, y) > R(x, y)

---

76. Ten straight lines, no two of which are parallel and no three of which pass through any common point, are drawn on a plane. The total number of regions (including finite and infinite regions) into which the plane would be divided by the lines is

(A) 56
(B) 255
(C) 1024
(D) not unique

---

77. When 2^{256} is divided by 17, the remainder would be

(A) 1
(B) 16
(C) 14
(D) None of these

---

78. The number of real roots of the equation $A^2/x + B^2/(x-1) = 1$, where A and B are real numbers not equal to zero simultaneously, is

(A) 3
(B) 1
(C) 2
(D) Cannot be determined

---

79. At a bookstore, 'MODERN BOOK STORE' is flashed using neon lights. The words are individually flashed at the intervals of 2.5 s, 4.25 s and 5.125 s respectively, and each word is put off after a second. The least time after which the full name of the bookstore can be read again for a full second is

(A) 49.5 s
(B) 72.5 s
(C) 1744.5 s
(D) 855 s

---

80. Three pieces of cakes of weights 4.5 lb, 6.75 lb and 7.2 lb respectively are to be divided into parts of equal weight. Further, each part must be as heavy as possible. If one such part is served to each guest, then what is the maximum number of guests that could be entertained?

(A) 54
(B) 72
(C) 20
(D) None of these

---

81. After the division of a number successively by 3, 4 and 7, the remainders obtained are 2, 1 and 4 respectively. What will be the remainder if 84 divides the same number?

(A) 80
(B) 75
(C) 41
(D) 53

---

82. Six persons are playing a card game sitting around a circular table. Suresh is facing Raghubir who is to the left of Ajay and to the right of Pramod. Ajay is to the left of Dhiraj. Yogendra is to the left of Pramod. If Dhiraj exchanges his seat with Yogendra and Pramod exchanges with Raghubir, who will be sitting to the left of Dhiraj?

(A) Yogendra
(B) Raghubir
(C) Suresh
(D) Ajay

Questions 83 to 84

A boy is asked to put one mango in a basket when ordered 'One', one orange when ordered 'Two', one apple when ordered 'Three', and is asked to take out from the basket one mango and an orange when ordered 'Four'.

A sequence of orders is given as: 1 2 3 3 2 1 4 2 3 1 4 2 2 3 3 1 4 1 1 3 2 3 4

83. How many total oranges were in the basket at the end of the above sequence?

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

84. How many total fruits will be in the basket at the end of the above order sequence?

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

Questions 85 to 86

Directions for the next two questions: Answer the questions based on the following information.

Each of the 11 letters A, H, I, M, O, T, U, V, W, X and Z appears same when looked at in a mirror. They are called symmetric letters. Other letters in the alphabet are asymmetric letters.

85. How many four-letter computer passwords can be formed using only the symmetric letters (no repetition allowed)?

(A) 7,920
(B) 330
(C) 14,640
(D) 4,19,430

86. How many three-letter computer passwords can be formed (no repetition allowed) with at least one symmetric letter?

(A) 990
(B) 2,730
(C) 12,870
(D) 15,600

87. A train approaches a tunnel AB. Inside the tunnel is a cat located at a point that is 3/8 of the distance AB measured from the entrance A. When the train whistles the cat runs. If the cat moves to the entrance of the tunnel A, the train catches the cat exactly at the entrance. If the cat moves to the exit B, the train catches the cat at exactly the exit. What is the ratio of speed of train and cat ?

(A) 3 : 1
(B) 4 :1
(C) 5 : 1
(D) None of these

88. A piece of string is 40 cm long. It is cut into three pieces. The longest piece is three times as long as the middle-sized and the shortest piece is 23 cm shorter than the longest piece. Find the length of the shortest piece.

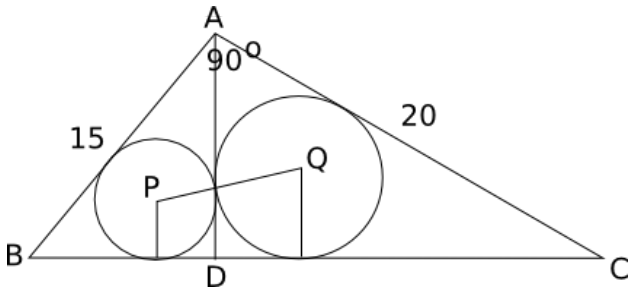
(A) 27
(B) 5
(C) 4
(D) 9

89. Three travellers are sitting around a fire, and are about to eat a meal. One of them has 5 small loaves of bread, the second has 3 small loaves of bread. The third has no food, but has 8 coins. He offers to pay for some bread. They agree to share the 8 loaves equally among the three travellers, and the third traveller will pay 8 coins for his share of the 8 loaves. All loaves were the same size. The second traveller (who had 3 loaves) suggests that he will be paid 3 coins, and that the first traveller be paid 5 coins. The first traveller says that he should get more than 5 coins. How much should the first traveller get?

(A) 5
(B) 7
(C) 1
(D) None of these

---

90. In the following figure, ACB is a right-angled triangle. AD is the altitude. Circles are inscribed within the triangle ACD and triangle BCD. P and Q are the centers of the circles. The distance PQ is



The length of AB is 15 m and AC is 20 m

(A) 7 m
(B) 4.5 m
(C) 10.5 m
(D) 6 m

---

91. If u, v, w and m are natural numbers such that $u^m + v^m = w^m$, then which one of the following is true?

(A) m >= min(u, v, w)
(B) m >= max(u, v, w)
(C) m < min(u, v, w)
(D) None of these

---

92. In how many ways is it possible to choose a white square and a black square on a chessboard so that the squares must not lie in the same row or column?

(A) 56
(B) 896
(C) 60
(D) 768

---

93. $7^{6n} - 6^{6n}$, where n is an integer > 0, is divisible by

(A) 13
(B) 127
(C) 559
(D) All of these

---

94. If pqr = 1, the value of the expression $1/(1+p+q^{-1}) + 1/(1+q+r^{-1}) + 1/(1+r+p^{-1})$

(A) p+q+r
(B) 1/(p+q+r)
(C) 1
(D) $p^{-1} + q^{-1} + r^{-1}$

---

95. It takes six technicians a total of 10 hr to build a new server from Direct Computer, with each working at the same rate. If six technicians start to build the server at 11 am, and one technician per hour is added beginning at 5 pm, at what

time will the server be completed? [CAT 2002]

(A) 6.40 pm
(B) 7 pm
(C) 7.20 pm
(D) 8 pm

96. Davji Shop sells samosas in boxes of different sizes. The samosas are priced at Rs. 2 per samosa up to 200 samosas. For every additional 20 samosas, the price of the whole lot goes down by 10 paise per samosa. What should be the maximum size of the box that would maximise the revenue?

(A) 240
(B) 300
(C) 400
(D) None of these

97. Three small pumps and a large pump are filling a tank. Each of the three small pump works at 2/3 the rate of the large pump. If all four pumps work at the same time, they should fill the tank in what fraction of the time that it would have taken the large pump alone?

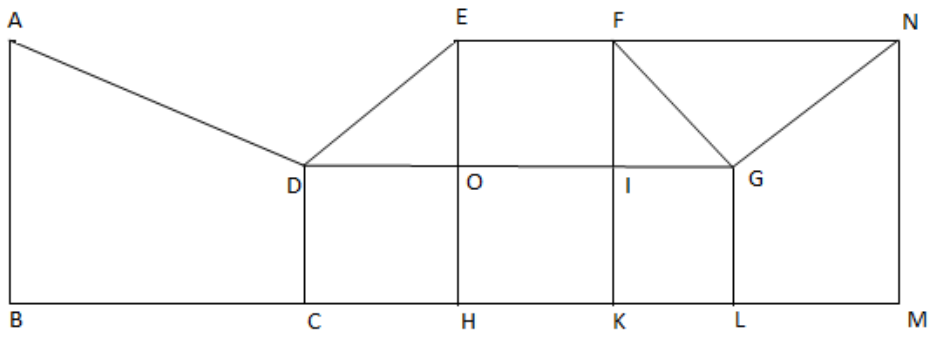
(A) 4/7
(B) 1/3
(C) 2/3
(D) 3/4

Questions 98 to 99

Directions for the next two questions: Answer the questions based on the following diagram

In the following diagram, $\angle ABC = 90° = \angle DCH = \angle DOE = \angle EHK = \angle FKL = \angle GLM = \angle LMN$

AB = BC = 2CH = 2CD = EH = FK = 2HK = 4KL = 2LM = MN



98. The magnitude of $\angle FGO =$

(A) 30°
(B) 45°
(C) 60°
(D) None of these

99. What is the ratio of the areas of the two quadrilaterals ABCD to DEFG?

(A) 1 : 2
(B) 2 : 1
(C) 12 : 7
(D) None of these

100. How many numbers greater than 0 and less than a million can be formed with the digits 0, 7 and 8?

(A) 486
(B) 1,084
(C) 728
(D) None of these

101. Out of the four possibilities given, select the one that has all the definitions and their usages most closely matched. "Measure" A. Size or quantity found by measuring B. Vessel of standard capacity C. Suitable action D. Ascertain extent or quantity E. A measure was instituted to prevent outsiders from entering the campus F. Sheila was asked to measure each item that was delivered. G. The measure of the cricket pitch was 22 yards. H. Ramesh used a measure to take out one litre of oil.

(A) A-H, B-F, C-E, D-G
(B) A-G, B-E, C-F, D-H
(C) A-G, B-H, C-E, D-F
(D) A-F, B-H, C-E, D-G

---

102. Out of the four possibilities given, select the one that has all the definitions and their usages most closely matched. "Bound" A. Obliged, constrained B. Limiting value C. Move in a specified direction D. Destined or certain to be E. Dinesh felt bound to walk out when the discussion turned to kickbacks. F. Buffeted by contradictory forces he was bound to lose his mind. G. Vidya's story strains the bounds of credulity. H. Bound for a career in law, Jyoti was reluctant to study Milton.

(A) A-F, B-H, C-G, D-E
(B) A-E, B-G, C-H, D-F
(C) A-E, B-H, C-F, D-G
(D) A-F, B-G, C-E, D-H

---

103. Out of the four possibilities given, select the one that has all the definitions and their usages most closely matched. "Catch" A. Capture B. Grasp with senses of mind C. Deception D. Thing or person worth trapping E. All her friends agreed that Prasad was a good catch. F. The proposal sounds very good but where is the catch? G. Hussain tries to catch the spirit of India in this painting. H. Sorry, I couldn't catch you.

(A) A-H, B-F, C-E, D-G
(B) A-F, B-G, C-E, D-H
(C) A-G, B-F, C-E, D-H
(D) A-G, B-H, C-F, D-E

---

104. Out of the four possibilities given, select the one that has all the definitions and their usages most closely matched. "Deal" A. Manage, attend to B. Stock, sell C. Give out to a number of people D. Be concerned with E. Dinesh insisted on dealing the cards. F. This contract deals with handmade cards. G. My brother deals in cards. H. I decided not to deal with handmade cards.

(A) A-F, B-E, C-G, D-H
(B) A-H, B-G, C-E, D-F
(C) A-F, B-H, C-G, D-E
(D) A-H, B-E, C-G, D-F

---

105. Out of the four possibilities given, select the one that has all the definitions and their usages most closely matched. "Turn" A. Give new direction to B. Send C. Change in form D. Opportunity coming successively for each person E. It was now his turn to be angry. F. Leena never turned away a beggar. G. Ashish asked Laxman to turn his face to the left. H. The old school building has been turned into a museum.

(A) A-H, B-E, C-F, D-G
(B) A-G, B-F, C-E, D-H
(C) A-G, B-E, C-F, D-H
(D) A-G, B-F, C-H, D-E

---

106. The sentences given in each question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a letter. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph. A. Branded disposable diapers are available at many supermarkets

and drug stores. B. If one supermarket sets a higher price for a diaper, customers may buy that brand elsewhere. C. By contrast, the demand for private-label products may be less price sensitive since it is available only at a corresponding supermarket chain. D. So the demand for branded diapers at any particular store may be quite price sensitive. E. For instance, only SavOn Drugs stores sell SavOn Drugs diapers. F. Then stores should set a higher incremental margin percentage for private label diapers.

(A) ABCDEF
(B) ABCEDF
(C) ADBCEF
(D) AEDBCF

---

107. The sentences given in each question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a letter. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph. A. Having a strategy is a matter of discipline. B. It involves the configuration of a tailored value chain that enables a company to offer unique value. C. It requires a strong focus on profitability and a willingness to make tough tradeoffs in choosing what not to do. D. Strategy goes far beyond the pursuit of best practices. E. A company must stay the course even during times of upheaval, while constantly improving and extending its distinctive positioning. F. When a company's activities fit together as a self-reinforcing system, any competitor wishing to imitate a strategy must replicate the whole system.

(A) ACEDBF
(B) ACBDEF
(C) DCBEFA
(D) ABCEDF

---

108. The sentences given in each question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a letter. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph. A. As officials, their vision of a country shouldn't run too far beyond that of the local people with whom they have to deal. B. Ambassadors have to choose their words. C. To say what they feel they have to say, they appear to be denying or ignoring part of what they know. D. So, with ambassadors as with other expatriates in black Africa, there appears at a first meeting a kind of ambivalence. E. They do a specialized job and it is necessary for them to live ceremonial lives.

(A) BCEDA
(B) BEDAC
(C) BEADC
(D) BCDEA

---

109. The sentences given in each question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a letter. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph. A. "This face-off will continue for several months given the strong convictions on either side," says a senior functionary of the high-powered task force on drought. B. During the past week-and-half, the Central Government has sought to deny some of the earlier apprehensions over the impact of drought. C. The recent revival of the rains had led to the emergence of a line of divide between the two. D. The state governments, on the other hand, allege that the Centre is downplaying the crisis only to evade its full responsibility of financial assistance that is required to alleviate the damage. E. Shrill alarm about the economic impact of an inadequate monsoon had been sounded by the Centre as well as most of the states, in late July and early August.

(A) EBCDA
(B) DBACE
(C) BDCAE
(D) ECBDA

---

110. The sentences given in each question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a letter. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph. A. This fact was established in the 1730s by French survey

expenditions to Equador near the Equator and Lapland in the Arctic, which found that around the middle of the earth the arc was about a kilometer shorter. B. One of the unsettled scientific questions in the late 18th century was that exact nature of the shape of the earth. C. The length of one-degree arc would be less near the equatorial latitudes than at the poles. D. One way of doing that is to determine the length of the arc along a chosen longitude or meridian at one degree latitude separation. E. While it was generally known that the earth was not a sphere but an 'oblate spheroid', more curved at the equator and flatter at the poles, the question of 'how much more' was yet to be established.

(A) BECAD
(B) BEDCA
(C) EDACB
(D) EBDCA

Questions 111 to 113

Directions for the next 3 questions: Fill the gaps in the passages below with the most appropriate word from the options given for each gap. The right words are the ones used by the author. Be guided by the author's overall style and meaning when you choose the answers.

Von Nuemann and Morgenstern assume a decision framework in which all options are thoroughly considered, each option being independent of the others, with a numerical value derived for the utility of each possible outcome (these outcomes reflecting, in turn, all possible combinations of choices). The decision is then made to maximize the expected utility. ... 1 ... such a model reflects major simplifications of the way divisions are made in the real world. Humans are not able to process information as quickly and effectively as the model assumes; they tend not to think ... 2 ... as easily as the model calls for; they often deal with a particular option without really assessing its ... 3 ... and when they do assess alternatives, they may be extremely nebulous about their criteria of evaluation.

111. 1

(A) Regrettably
(B) Firstly
(C) Obviously
(D) Apparently

112. 2

(A) quantitatively
(B) systematically
(C) scientifically
(D) analytically

113. 3

(A) implications
(B) disadvantages
(C) utility
(D) alternatives

Questions 114 to 116

Directions for the next 3 questions: Fill the gaps in the passages below with the most appropriate word from the options given for each gap. The right words are the ones used by the author. Be guided by the author's overall style and meaning when you choose the answers.

In a large company, ... 1 ... people is about as common as using a gun or a switch-blade to ... 2 ... an argument. As a result, most managers have little or no experience of firing people, and they find it emotionally traumatic; as result, they often delay the act interminably, much as an unhappy spouse will prolong a bad marriage. And when the firing is done, it's often done clumsily, with far worse

side effects than are necessary. Do the world-class software organizations have a different way of firing people? No, but they do the deed swiftly, humanely, and professionally. The key point here is to view the fired employee as a 'failed product' and to ask how the process ... 3 ... such a phenomenon in the first place.

114. Fill in the blank at 1.

(A) dismissing
(B) punishing
(C) firing
(D) admonishing

---

115. Fill in the blank at 2.

(A) resolve
(B) thwart
(C) defeat
(D) close

---

116. Fill in the blank at 3.

(A) derived
(B) engineered
(C) produced
(D) allowed

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117. Choose the best way of writing the sentence. A. The main problem with the notion of price discrimination is that it is not always a bad thing, but that it is the monopolist who has the power to decide who is charged what price. B. The main problem with the notion of price discrimination is not that it is always a bad thing, it is the monopolist who has the power to decide who is charged what price. C. The main problem with the notion of price discrimination is not that it is always a bad thing, but that it is the monopolist who has the power to decide who is charged what price. D. The main problem with the notion of price discrimination is not it is always a bad thing, but that it is the monopolist who has the power to decide who is charged what price.

(A) A
(B) B
(C) C
(D) D

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118. Choose the best way of writing the sentence. A. A symbiotic relationship develops among the contractors, bureaucracy and the politicians, and by a large number of devices costs are artificially escalated and black money is generated by underhand deals. B. A symbiotic relationship develops among contractors, bureaucracy and politicians, and costs are artificially escalated with a large number of devices and black money is generated through underhand deals. C. A symbiotic relationship develops among contractors, bureaucracy and the politicians, and by a large number of devices costs are artificially escalated and black money is generated on underhand deals. D. A symbiotic relationship develops among the contractors, bureaucracy and politicians, and by large number of devices costs are artificially escalated and black money is generated by underhand deals.

(A) A
(B) B
(C) C
(D) D

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119. Choose the best way of writing the sentence. A. The distinctive feature of tariffs and export subsidies is that they create difference of prices at which goods are traded on the world market and their price within a local market. B. The distinctive feature of tarriffs and export subsidies is that they create a difference of prices at which goods are traded with the world market and their prices in the local market. C.

The distinctive feature of tariffs and export subsidies is that they create a difference between prices at which goods are traded on the world market and their prices within a local market. D. The distinctive feature of tarriffs and export subsidies is that they create a difference across prices at which goods are traded with the world market and their prices within a local market.

(A) A
(B) B
(C) C
(D) D

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120. Choose the best way of writing the sentence. A. Any action of government to reduce the systemic risk inherent in financial markets will also reduce the risks that private operators perceive and thereby encourage excessive hedging. B. Any action by government to reduce the systemic risk inherent in financial markets will also reduce the risks that private operators perceive and thereby encourage excessive gambling. C. Any action by government to reduce the systemic risk inherent in financial markets will also reduce the risks that private operators perceive and thereby encourages excessive gambling. D. Any action of government to reduce the systemic risk inherent in financial markets will also reduce the risks that private operators perceive and thereby encourages excessive gambling.

(A) A
(B) B
(C) C
(D) D

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121. From the alternatives given pick the word or phrase that is closest in meaning in the given context. Opprobrium: The police officer appears oblivious to the opprobrium generated by his blatantly partisan conduct.

(A) Harsh criticism
(B) Acute distrust
(C) Bitter enmity
(D) Stark oppressiveness

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122. From the alternatives given pick the word or phrase that is closest in meaning in the given context. Portend: It appears to many that the US 'war on terrorism' portends trouble in the Gulf.

(A) Introduces
(B) Bodes
(C) Spells
(D) Evokes

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123. From the alternatives given pick the word or phrase that is closest in meaning in the given context. Prevaricate: When a videotape of her meeting was played back to her and she was asked to explain her presence there, she started prevaricating.

(A) Speaking evasively
(B) Speaking violently
(C) Lying furiously
(D) Throwing a tatrum

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124. From the alternatives given pick the word or phrase that is closest in meaning in the given context. Restive: The crowd became restive when the minister failed to appear even by 10 pm.

(A) Violent
(B) Angry
(C) Restless
(D) Distressed

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125. From the alternatives given pick the word or phrase that is closest in meaning in the given context. Ostensible: Manohar's ostensible job was to guard the building at night.

(A) Apparent
(B) Blatant
(C) Ostentatious
(D) Insidious

Questions 126 to 130

Choose the best answer for each question.

The production of histories of India has become very frequent in recent years and may well call for some explanation. Why so many and why this one in particular? The reason is a two-fold one: changes in the Indian scene requiring a re-interpretation of the facts and changes in attitudes of historians about the essential elements of Indian history. These two considerations are in addition to the normal fact of fresh information, whether in the form of archaeological discoveries throwing fresh light on an obscure period or culture, or the revelations caused by the opening of archives or the release of private papers. The changes in the Indian scene are too obvious to need emphasis. Only two generations ago British rule seemed to most Indian as well as British observers likely to extend into an indefinite future; now there is a teenage generation which knows nothing of it. Changes in the attitudes of historians have occurred everywhere, changes in attitudes to the content of the subject as well as to particular countries, but in India, there have been some special features. Prior to the British, Indian historiographers were mostly Muslims, who relied, as in the case of Sayyid Ghulam Hussain, on their own recollection of events and on information from friends and men of affairs. Only a few like Abu'l Fazl had access to official papers. These were personal narratives of events, varying in value with the nature of the writer. The early British writers were officials. In the 18th century they were concerned with some aspect of Company policy, or like Robert Orme in his Military Transactions gave a straight narrative in what was essentially a continuation of the Muslim tradition. In the early 19th century the writers were still, with two notable exceptions, officials, but they were now engaged in chronicling, in varying moods of zest, pride, and awe, the rise of the British power in India to supremacy. The two exceptions were James Mill, with his critical attitude to the Company and John Marchman, the Baptist missionary. But they, like the officials, were anglocentric in their attitude, so that the history of modern India in their hands came to be the history of the rise of the British in India.

The official school dominated the writing of Indian history until we get the first professional historian's approach. Ramsay Muir and P. E. Roberts in England and H. H. Dodwell in India. Then Indian historians trained in the English school joined in, of whom the most distinguished was Sir Jadunath Sarkar and the other notable writers: Surendranath Sen, Dr Radhakumud Mukherji, and Professor Nilakanta Sastri. They, it may be said, restored India to Indian history, but their bias was mainly political. Finally have come the nationalists who range from those who can find nothing good or true in the British to sophisticated historical philosophers like K. M. Panikker.

Along the types of historians with their varying bias have gone changes in the attitude to the content of Indian history. Here Indian historians have been influenced both by their local situation and by changes of thought elsewhere. It is this field that this work can claim some attention since it seeks to break new ground, or perhaps to deepen a freshly turned furrow in the field of Indian history. The early official historians were content with the glamour and drama of political history from Plassey to the Mutiny, from Dupleix to the Sikhs. But when the raj was settled down, glamour departed from politics, and they turned to the less glorious but more solid ground of administration. Not how India was conquered but how it was governed was the theme of this school of historians. It found its archpriest in H. H. Dodwell, its priestess in Dame Lilian Penson, and its chief shrine in the Volume VI of the Cambridge History of India. Meanwhile, in Britain other currents were moving, which led historical study into the economic and social fields. R. C. Dutt entered the first of these currents with his Economic History of India to be followed more recently by the whole group of Indian economic historians. W. E. Moreland extended these studies to the Mughal Period. Social history is now being increasingly studied and there is also of course a school of nationalist historians who see modern Indian history in terms of the rise and the fulfilment of the national movement.

All these approaches have value, but all share in the quality of being compartmental. It is not enough to remove political history from its pedestal of being the only kind of history worth having if it is merely to put other types of history in its place. Too exclusive an attention to economic, social, or administrative history can be as sterile and misleading as too much concentration on politics. A whole subject needs a whole treatment for understanding. A historian must dissect his subject into its elements and then fuse them together again into an integrated whole. The true history of a country must contain all the features just cited but must present them as parts of a single consistent theme.

126. Which of the following may be the closest in meaning to the statement 'restored India to Indian history'?

(A) Indian historians began writing Indian history.

(B) Trained historians began writing Indian history.

(C) Writing India-centric Indian history began.

(D) Indian history began to be written in India

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127. Which of the following is the closest implication of the statement 'to break new ground, or perhaps to deepen a freshly turned furrow'?

(A) Dig afresh or dig deeper.

(B) Start a new stream of thought or help establish a recently emerged perspective.

(C) Begin or conduct further work on existing archeological sites to unearth new evidence.

(D) Begin writing a history free of any biases.

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128. Historians moved from writing political history to writing administrative history because

(A) attitudes of the historians changed.

(B) the raj was settled down.

(C) politics did not retain its past glamour.

(D) administrative history was based on solid ground.

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129. According to the author, which of the following is not among the attitudes of historians mapping Indian history?

(A) Writing history as personal narratives.

(B) Writing history with political bias.

(C) Writing non-political history due to lack of glamour.

(D) Writing history by dissecting elements and integrating them again.

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130. In the list given below, match the historians to the approaches taken by them. A - Administrative B - Political C - Narrative D - Economic E - Robert Orme F - H.H. Dodwell G - Radha Kumud Mukherji H - R.C. Dutt

(A) A - F, B - G, C - E, D - H

(B) A - G, B - F, C - E, D - H

(C) A - E, B - F, C - G, D - H

(D) A - F, B - H, C - E, D - G

Questions 131 to 136

There are a seemingly endless variety of laws, restrictions, customs and traditions that affect the practice of abortion around the world. Globally, abortion is probably the single most controversial issue in the whole area of women's rights and family matters. It is an issue that inflames women's right groups, religious institutions, and the self-proclaimed 'guardians' of public morality. The growing worldwide belief is that the right to control one's fertility is a basic human right. This has resulted in a worldwide trend towards liberalization of abortion laws. Forty per cent of the world's population live in countries where induced abortion is permitted on request. An additional 25 per cent live in countries where it is allowed if the women's life would be endangered if she went to full term with her pregancy. The estimate is that between 26 and 31 million legal abortions were performed in that year. However, there were also between 10 and 22 million illegal abortions performed in that year.

Feminists have viewed the patriarchal control of women's bodies as one of the prime issues facing the contemporary women's movement. They abserve that the defintion and control of women's reproductive freedom have always been the province of men. Patriarchal religion, as manifest in Islamic fundamentalism,traditionalist Hindu practice, orthodox Judaism, and Roman Catholicism, has been an important historical contributory factor for this and continues to be an important presence in contemporary societies. In recent times, govenments, usually controlled by men, have 'given' women the right to contraceptive use and abortion access when their countries were perceived to have an overpopulation problem. When these countries are perceived to be underpopulated, that right had been absent. Until the 19th century, a woman's rights to an abortion followed English common law; it could only be legally challenged if there was a 'quickening', when the first movements of the fetus could be felt. In 1800, drugs to induce abrotions were widely advertised in local newpapers. By 1900, abortion was banned in every state except to save the life of the mother. The change was strongly influenced by medical profession, which focussed its campaign ostensibly on health and safety issues for pregnant women and the sancity of life. Its position was also a means of control of non-licensed medical practitioners such as midwives and women healers who practiced abortion.

The anti-abortion campaign was also influenced by political considerations. The large influx of eastern and southern European immigrants with their large families was seen as a threat to the population balance of the future United States. Middle and upper-classes Protestants were advocates of abortion as a form of birth control. By supporting abortion prohibitions the hope was that these Americans would have more children and thus prevent the tide of immigrant babies from overwhelming the demographic characteristics of Protestant America.

The anti-abortion legislative position remained in effect in the United States through the first 65 years of the 20th century. In the early 1960s, even when it was widely known that the drug thalidomide taken during pregnancy to alleviate anxiety was shown to contribute to the formation of deformed 'flipper-like' hands or legs of children, abortion was illegal in the United States. A second health tragedy was the severe outbreak of rubella during the same time period, which also resulted in major birth defects. These tragedies combined with a change of attitude towards a woman's right to privacy led a number of states to pass abortion permitting legislation.

On one side of the controversy are those who call themselves 'pro-life'. They view the foetus as a human life rather than as an unformed complex of cells; therefore, they hold to the belief that abortion is essentially murder of an unborn child. These groups cite both legal and religious reasons for their opposition to abortion. Pro lifers point to the rise in legalised abortion figures and see this as morally intolerable. On the other side of the issue are those who call themselves 'pro-choice'. They believe that women, not legislators or judges, should have the right to decide whether and under what

circumstances they will bear children. Pro-choicers are of the opinion that laws will not prevent women from having abortions and cite the horror stories of the past when many women died at the hands of 'backroom' abortionists and in desperate attempts to self-abort. They also observe that legalized abortion is especially important for rape victims and incest victims who became pregnant. They stress physical and mental health reasons why women should not have unwanted children.

To get a better understanding of the current abortion controversy, let us examine a very important work by Kristin Luker titled Abortion and the Politics of Motherhood. Luker argues that female pro-choice and prolife activists hold different world views regarding gender, sex, and the meaning of parenthood. Moral positions on abortions are seen to be tied intimately to views on sexual bahaviour, the care of children, family life, technology, and the importance of the individual. Luker identified 'pro-choice' women as educated, affluent, and liberal. Their contrasting counterparts, 'pro-life' women, support traditional concepts of women as wives and mothers. It would be instructive to sketch out the differences in the world views of these two sets of women. Luker examines California, with its liberalized abortion law, as a case history. Public documents and newspaper accounts over a 26-year period were analysed and over 200 interviews were held withheld with both pro-life and pro-choice activists.

Luker found that pro-life and pro-choice activists have intrinsically different views with respect to gender. Pro-life women have a notion of public and private life. The proper place for men is in the public sphere of work; for women, it is the private sphere of the home. Men benefit through the nurturance of women; women benefit through the protection of men. Children are seen to be the ultimate beneficiaries of this arrangement of having the mother as a full-time loving parent and by having clear role models. Pro-choice advocates reject the view of separate spheres. They object to the notion of the home being the 'women's sphere'. Women's reproductive and family roles are seen as potential barriers to full equality. Motherhood is seen as a voluntary, not a mandatory or 'natural' role. In summarizing her findings, Luker believes that women become activists in either of the two movements as the end result of lives that centre around different conceptualizations of motherhood. Their beliefs and values are rooted to the concrete circumstances of their lives, their educations, incomes, occupations, and the different marital and family choices that they have made. They represent two different world views of women's roles in contemporary society and as such the abortion issues represent the battleground for the justification of their respective views.

131. According to your understanding of the author's arguments, which countries are more likely to allow abortion?

(A) Over populated countries like India and China

(B) Underpopulated countries like Australia and Mongolia

(C) Cannot be inferred from the passage

(D) Both (1) and (2)

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132. Which amongst these was not a reason for banning of abortions by 1900?

(A) Medical professionals stressing the health and safety of women

(B) Influx of eastern and sourthern European immigrants

(C) Control of unlicensed medical practitioners

(D) A tradition of matriarchal control

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133. A pro-life woman would advocate abortion if

(A) the mother of an unborn child is suicidal.

(B) bearing a child conflicts with a woman's career prospects.

(C) the mother becomes pregnant accidentally.

(D) None of these

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134. Pro-choice women object to the notion of the home being the 'women's sphere' because they believe

(A) that home is a 'joint sphere' shared between men and women.

(B) that reproduction is a matter of choice for women

(C) that men and women are equal

(D) Both (2) and (3)

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135. Two health tragedies affecting the US society in the 1960s led to

(A) a change in attitude to women's right to privacy.

(B) retaining the anti-abortion laws with some exceptions.

(C) scrapping of anti-abortion laws.

(D) strengthening of the pro-life lobby.

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136. Historically, the pro-choice movements has got support from, among others,

(A) major patriarchal religions.

(B) countries with low population density.

(C) medical profession.

(D) None of these

Questions 137 to 140

The conceptions of life and the world which we call 'philosophical' are a product of two factors: one, inherited religious and ethical conceptions; the other, the sort of investigation which may be called 'scientific', using this word in its broadest sense. Individual philosophers have differed widely in regard to the proportions in which these two factors entered into their systems, but it is the presence of both, in some degree, that characterizes philosophy.

'Philosophy' is a word which has been used in many ways, some wider, some narrower. I propose to use it in a very wide sense, which I will now try to explain.

Philosophy, as I shall understand the word, is something intermediate between theology and science. Like theology, it consists of speculations on matters as to which definite knowledge has, so far, been unascertainable; but like science, it appeals to human reason rather than to authority, whether that of tradition or that of revelation. All definite knowledge, so I should contend, belongs to science; all dogma as to what surpasses definite knowledge belongs to thelogy. But between theology and science there is a 'No man's Land', exposed to attack from both sides; this 'No Man's Land' is philosophy. Almost all the questions of most interest to speculative minds are such as science cannot answer, and the confident answers of theologians no longer seem so convincing as they did in former centuries. Is the world divided into mind and matter, and if so, what is mind and what is matter? Is mind subject to matter, or is it possessed of independent powers? Has the universe any unity or purpose? It is evolving towards some goal? Are there really laws of nature, or do we believe in them only because of our innate love of order? Is man what he seems to the astronomer, a tiny lump of

carbon and water impotently crawling on a small and unimportant planet? Or is he what he appears to Hamlet? Is he perhaps both at once? Is there a way of living that is noble and another that is base, or are all ways of living merely futile? If there is a way of living that is noble, in what does it consist, and how shall we achieve it? Must the good be eternal in order to deserve to be valued, or is it worth seeking even if the universe is inexorably moving towards death? Is there such a thing as wisdom, or is what seems such merely the ultimate refinement of folly? To such questions no answer can be found in the laboratory. Theologies have professed to give answers, all too definite; but their definiteness causes modern minds to view them with suspicion. The studying of these questions, if not the answering of them, is the business of philosophy.

Why, then, you may ask, waste time on such insoluble problems? To this one may answer as a historian, or as an individual facing the terror of cosmic loneliness.

The answer of the historian, in so far as I am capable of giving it, will appear in the course of this work. Ever since men became capable of free speculation, their actions in innumerable important respects, have depended upon their theories as to the world and human life, as to what is good and what is evil. This is as true in the present day as at any former time. To understand an age or a nation, we must understand its philosophy, and to understand its philosophy we must ourselves be in some degree philosophers. There is here a reciprocal causation: the circumstances of men's lives do much to determine their philosophy, but, conversely, their philosophy does much to determine their circumstances.

There is also, however, a more personal answer. Science tells us what we can know, but what we can know is little, and if we forget how much we cannot know we may become insensitive to many things of very great importance. Theology, on the other hand, induces a dogmatic belief that we have knowledge, where in fact we have ignorance, and by doing so generates a kind of impertinent insolence towards the universe. Uncertainty, in the presence of vivid hopes and fears, is painful, but must be endured if we wish to live without the support of comforting fairy tales. It is good either to forget the questions that philosophy asks, or to persuade ourselves that we have found indubitable answers to them. To teach how to live without certainty, and yet without being paralyzed by hesitation, is perhaps the chief thing that philosophy, in our age, can still do for those who study it.

137. The purpose of philosophy is to

(A) reduce uncertainty and choas.

(B) help us to cope with uncertainty and ambiguity.

(C) help us to find explanations for uncertainty.

(D) reduce the terror of cosmic loneliness.

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138. Based on the passage, what can be concluded about the relation between philosophy and science?

(A) The two are antagonistic.

(B) The two are complementary.

(C) There is no relation between the two.

(D) Philosophy derives from science.

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139. From reading the passage, what can be concluded about the profession of the author? He is most likely not to be a

(A) historian.

(B) philosopher.

(C) scientist.

(D) theologian.

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140. According to the author, which of the following statements about the nature of universe must be definitely true?

(A) The universe has unity.
(B) The universe has a purpose.
(C) The universe is evolving towards a goal.
(D) None of these

Questions 141 to 145

Cells are the ultimate multi-taskers: they can switch on genes and carry out their orders, talk to each other, divide in two, and much more, all at the same time. But they couldn't do any of these tricks without a power source to generate movement. The inside of a cell bustles with more traffic than Delhi roads, and, like all vehicles, the cell's moving parts need engines. Physicists and biologists have looked 'under the hood' of the cell and laid out the nuts and bolts of molecular engines.

The ability of such engines to convert chemical energy into motion is the envy of nanotechnology researchers looking for ways to power molecule-sized devices. Medical researchers also want to understand how these engines work. Because these molecules are essential for cell division, scientists hope to shut down the rampant growth of cancer cells by deactivating certain motors. Improving motor-driven transport in nerve cells may also be helpful for treating diseases such as Alzheimer's, Parkinson's or ALS, also known as Lou Gehrig's disease.

We wouldn't make it far in life without motor proteins. Our muscles wouldn't contract. We couldn't grow because the growth process requires cells to duplicate their machinery and pull the copies apart. And our genes would be silent without the services of messenger RNA, which carries genetic instructions over to the cell's protein-making factories. The movements that make these cellular activities possible occur along a complex network of threadlike fibres, or polymers, along which bundles of molecules travel like trams. The engines that power the cell's freight are three families of proteins called myosin, kinesin and dynein. For fuel, these proteins burn molecules of ATP, which cells make when they break down the carbohydrates and fats from the foods we eat. The energy from burning ATP causes changes in the proteins' shape that allow them to heave themselves along the polymer track. The results are impressive: In one second, these molecules can travel between 50 and 100 times their own diameter. If a car with a five-foot-wide engine were as efficient, it would travel 170 to 340 kilometres per hour.

Ronald Vale, a researcher at the Howard Hughes Medical Institute and the University of California at San Francisco, and Ronald Milligan of the Scripps Research Institute, have realized a long-awaited goal by reconstructing the process by which myosin and kinesin move, almost down to the atom. The dynein motor, on the other hand, is still poorly understood. Myosin molecules, best known for their role in muscle contraction, form chains that lie between filaments of another protein called actin. Each myosin molecule has a tiny head that pokes out from the chain like oars from a canoe. Just as rowers propel their boat by stroking their oars through the water, the myosin molecules stick their heads into the actin and hoist themselves forward along the filament. While myosin moves along in short strokes, its cousin kinesin walks steadily along a different type of filament called a microtubule. Instead of using a projecting head as a lever, kinesin walks on two 'legs'. Based on these differences, researchers used to think that myosin and kinesin were virtually unrelated. But newly discovered similarities in the motors' ATP-processing machinery now suggest that they share a common ancestor — molecule. At this point, scientists can only speculate as to what type of primitive cell-like structure this ancestor occupied as it learned to burn ATP and use the energy to change shape. "We'll never really know because we can't dig up the remains of ancient proteins, but that was probably a big evolutionary leap," says Vale.

On a slightly larger scale, loner cells like sperm or infectious bacteria are prime movers that

resolutely push their way through to other cells. As L. Mahadevan and Paul Matsudaira of the Massachusetts Institute of Technology explain, the engines, in this case, are springs or ratchets that are clusters of molecules rather than single proteins like myosin and kinesin. Researchers don't yet fully understand these engines' fueling process or the details of how they move, but the result is a force to be reckoned with. For example, one such engine is a spring-like stalk connecting a single-celled organism called a vorticellid to the leaf fragment it calls home. When exposed to calcium, the spring contracts, yanking the vorticellid down at speeds approaching three inches (eight centimetres) per second.

Springs like this are coiled bundles of filaments that expand or contract in response to chemical cues. A wave of positively charged calcium ions, for example, neutralizes the negative charges that keep the filaments extended. Some sperm use spring-like engines made of actin filaments to shoot out a barb that penetrates the layers that surround an egg. And certain viruses use a similar apparatus to shoot their DNA into the host's cell. Ratchets are also useful for moving whole cells, including some other sperm and pathogens. These engines are filaments that simply grow at one end, attracting chemical building blocks from nearby. Because the other end is anchored in place, the growing end pushes against any barrier that gets in its way.

Both springs and ratchets are made up of small units that each move just slightly, but collectively produce a powerful movement. Ultimately, Mahadevan and Matsudaira hope to better understand just how these particles create an effect that seems to be so much more than the sum of its parts. Might such an understanding provide inspiration for ways to power artificial nano-sized devices in the future? "The short answer is absolutely," says Mahadevan. "Biology has had a lot more time to evolve enormous richness in design for different organisms. Hopefully, studying these structures will not only improve our understanding of the biological world, it will also enable us to copy them, take apart their components and recreate them for other purpose."

141. According to the author, one of the objectives of the research on the power source of movement in cells can is to

(A) control the movement of genes within human systems.

(B) understand nano-sized devices better.

(C) arrest the growth of cells in a human being.

(D) develop potential cures for a variety of diseases.

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142. The author has used several analogies in the article. Which of the following pairs of words are examples of the analogies used? A. Cell activity and vehicular traffic B. Polymers and tram tracks C. Genes and canoes D. Vorticellids and ratchets

(A) A and B

(B) B and C

(C) A and D

(D) A and C

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143. Read the five statements below: A, B, C, D, and E. From the options given, select the one which includes a statement that is not representative of an argument presented in the passage. A. Sperms use spring-like engines made of actin filament. B. Myosin and kinesin are unrelated. C. Nanotechnology researchers look for ways to power molecule-sized devices. D. Motor proteins help muscle contraction. E. The dynein motor is still poorly understood.

(A) A, B and C

(B) C, D and E

(C) A, D and E

(D) A, C and D

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144. Read the four statements below: A, B, C and D. From the options given, select the one which includes only statements that are representative of arguments presented in the passage. A. Protein motors help growth processes. B. Improved transport in nerve cells will help arrest tuberculosis and cancer. C. Though the smaller units that make up springs move only slightly, they collectively produce powerful movement. D. Vorticellid and the leaf fragment are connected by a calcium engine.

(A) A and B but not C
(B) A and C but not D
(C) A and D but not B
(D) C and D but not B

145. Read the four statements below: A, B, C and D. From the options given, select the one which includes statements that are representative of arguments presented in the passage. A. Myosin, kinesin and dynein are three types of protein. B. Growth processes involve a routine in a cell that duplicates their machinery and pulls the copies apart. C. Myosin molecules can generate vibrations in muscles. D. Ronald and Mahadevan are researchers at the Massachusetts Institute of Technology.

(A) A and B but not C and D
(B) B and C but not a
(C) B and D but not A and C
(D) A, B and C but not D

Questions 146 to 150

If translated into English, most of the ways economists talk among themselves would sound plausible enough to poets, journalists, businesspeople, and other thoughtful though non-economical folk. Like serious talk anywhere — among boat designers and baseball fans, say — the talk is hard to follow when one has not made a habit of listening to it for a while. The culture of the conversation makes the words arcane. But the people in the unfamiliar conversation are not Martians. Underneath it all (the economist's favourite phrase) conversational habits are similar. Economics uses mathematical models and statistical tests and market arguments, all of which look alien to the literary eye. But looked at closely they are not so alien. They may be seen as figures of speech - metaphors, analogies, and appeals to authority.

Figures of speech are not mere frills. They think for us. Someone who thinks of a market as an 'invisible hand' and the organization of work as a 'production function' and his coefficients as being 'significant', as an economist does, is giving the language a lot of responsibility. It seems a good idea to look hard at his language.

If the economic conversation were found to depend a lot on its verbal forms, this would not mean that economics would be not a science, or just a matter of opinion, or some sort of confidence game. Good poets, though not scientists, are serious thinkers about symbols; good historians, though not scientists, are serious thinkers about data. Good scientists also use language. What is more (though it remains to be shown) they use the cunning of language, without particularly meaning to. The language used is a social object, and using language is a social act. It requires cunning (or, if you prefer, consideration), attention to the other minds present when one speaks.

The paying of attention to one's audience is called 'rhetoric', a word that I later exercise hard. One uses rhetoric, of course, to warn of a fire in a theatre or to arouse the xenophobia of the electorate. This sort of yelling is the vulgar meaning of the word, like the president's 'heated rhetoric' in a press conference or the 'mere rhetoric' to which our enemies stoop. Since the Greek flame was lit, though, the word has been used also in a broader and more amiable sense, to mean the study of all the ways of accomplishing things with language: inciting a mob to lynch the accused, to be sure, but also persuading readers of a novel that its characters breathe, or bringing scholars to accept the better argument and reject the worse.

The question is whether the scholar- who usually fancies himself an announcer of 'results' or a stater of 'conclusions' free of rhetoric — speaks rhetorically. Does he try to persuade? It would seem so. Language, I just said, is not a solitary accomplishment. The scholar doesn't speak into the void, or to himself. He speaks to a community of voices. He desires to be heeded, praised, published, imitated, honoured, en-Nobeled. These are the desires. The devices of language are the means. Rhetoric is the proportioning of means to desires in speech.

Rhetoric is an economics of language, the study of how scarce means are allocated to the insatiable desires of people to be heard. It seems on the face of it a reasonable hypothesis that economists are like other people in being talkers, who desire listeners when they go to the library or the laboratory as much as when they go to the office or the polls. The purpose here is to see if this is true, and to see if it is useful: to study the rhetoric of economic scholarship.

The subject is scholarship. It is not the economy, or the adequacy of economic theory as a description of the economy, or even mainly the economist's role in the economy. The subject is the conversation economists have among themselves, for purposes of persuading each other that the interest elasticity of demand for investment is zero or that the money supply is controlled by the Federal Reserve.

Unfortunately, though, the conclusions are of more than academic interest. The conversations of classicists or of astronomers rarely affect the lives of other people. Those of economists do so on a large scale. A well-known joke describes a May Day parade through Red Square with the usual mass of soldiers, guided missiles, rocket launchers. At last, come rank upon rank of people in grey business suits. A bystander asks, "Who are those?" "Aha!" comes the reply, "those are economists: you have no idea what damage they can do!" Their conversations do it.

146. According to the passage, which of the following is the best set of reasons for which one needs to 'look hard' at an economist's language? A. Economists accomplish a great deal through their language. B. Economics is an opinion-based subject. C. Economics has a great impact on other's lives. D. Economics is damaging.

(A) A and B
(B) C and D
(C) A and C
(D) B and D

147. In the light of the definition of rhetoric given in the passage, which of the following will have the least element of rhetoric?

(A) An election speech
(B) An advertisement jingle
(C) Dialogues in a play
(D) Commands given by army officers

148. As used in the passage, which of the following is the closest meaning to the statement 'The culture of the conversation makes the words arcane'?

(A) Economists belong to a different culture.
(B) Only mathematicians can understand economicsts.
(C) Economists tend to use terms unfamiliar to the lay person, but depend on familiar linguistic forms.
(D) Economists use similes and adjectives in their analysis.

149. As used in the passage, which of the following is the closest alternative to the word 'arcane'?

(A) Mysterious
(B) Secret
(C) Covert
(D) Perfidious

150. Based on your understanding of the passage, which of the following conclusions would you agree with?

(A) The geocentric and the heliocentric views of the solar system are equally tenable.

(B) The heliocentric view is superior because of better rhetoric.

(C) Both views use rhetoric to persuade.

(D) Scientists should not use rhetoric.

- End of Question Paper -