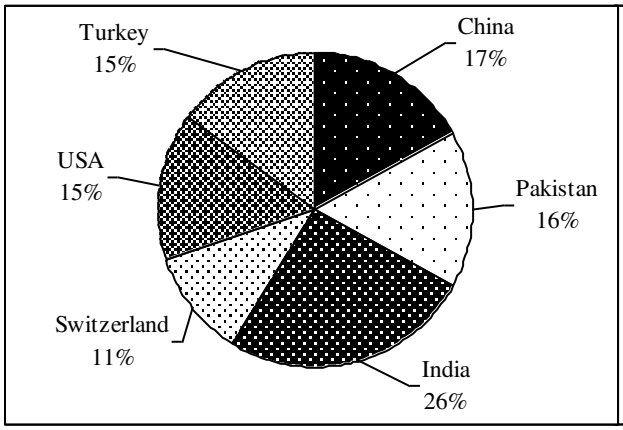
SECTION I
No of questions – 50

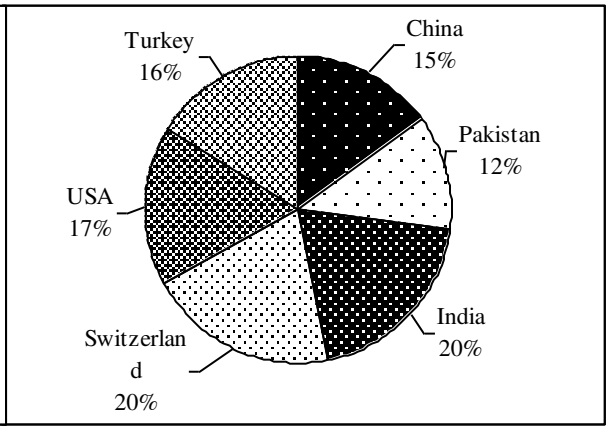
DIRECTIONS ***for questions 1 – 2:*** Answer these questions based on the pie charts given belowIn the pie charts below the production of textiles under the Multi-Fibre Agreement (MFA) are shown. The total value of production was 5760 million Euros, the total volume of production was 1.055 million tonnes.

SUPPLY OF MFA TEXTILES

By Volume, 1995



By Value, 1995



1. Which was the country with the highest average price per kg?

1. USA 2. Switzerland 3. Turkey 4. India

2. The average price in Euros / kg for Turkey is

1. 6.2 2. 5.6 3. 4.2 4. 4.8

DIRECTIONS ***for questions 3 – 5:*** Answer these questions based on the table below:
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 based 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
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

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

1. zero 2. one 3. two 4. three

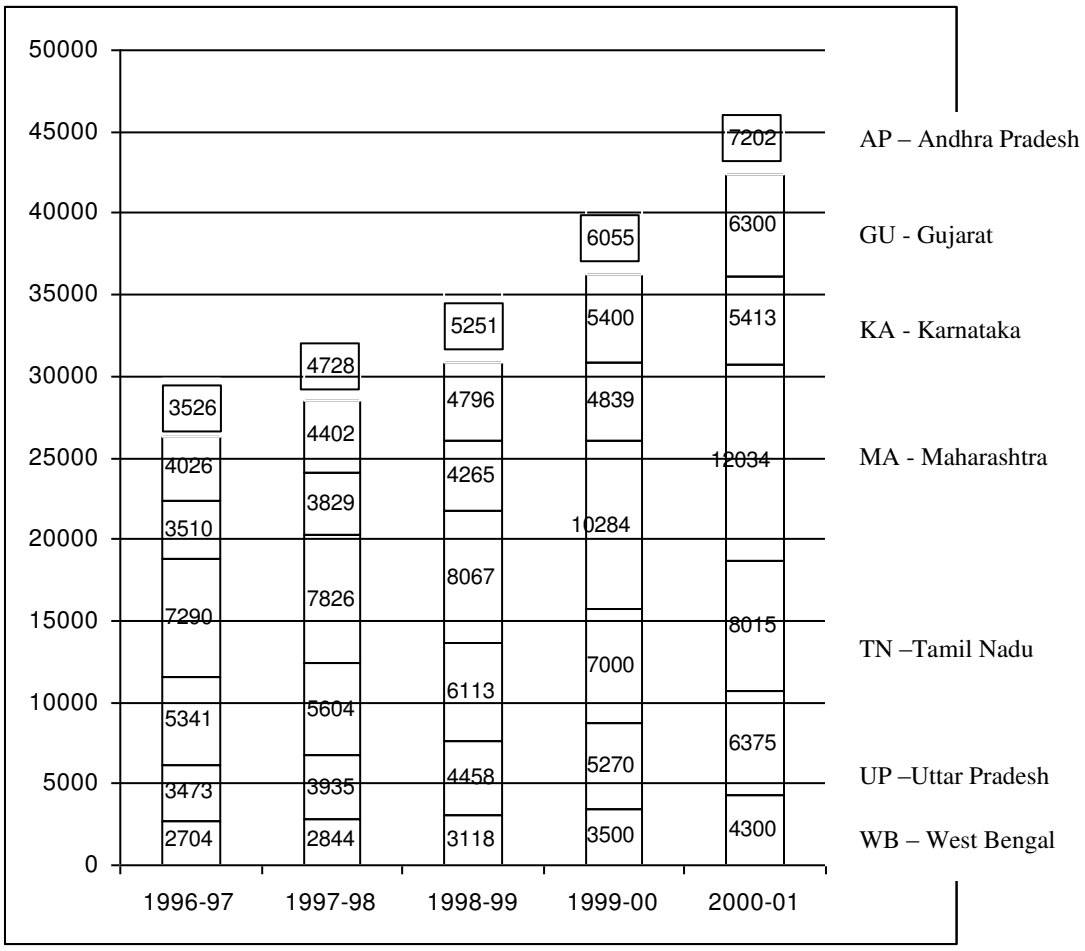
4. Which of the following is true?

1. All medium quality crop-2 producing regions are also high quality crop-3 producing regions
2. All high quality crop-1 producing regions are also medium and low crop -4 producing regions
3. There are exactly four crop-3 producing regions which also produce crop-4 but not crop 2
4. Some crop-3 producing regions produce crop-1 but not high quality crop-2

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

1. One 2. Two 3. Three 4. Zero

DIRECTIONS ***for questions 6 – 11:*** The chart below indicates the annual sales tax revenue collections (in crores of rupees) of seven states from 1997 to 2001. The values given at the top of each bar represent the total collections in that year.



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

1. 1 2. 5 3. 3 4. 4

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

1. Andhra Pradesh 2. Uttar Pradesh 3. Karnataka 4. Tamil Nadu

8. The percentage share of sales tax revenue of which state increased from 96-97 to 00-01?

1. Tamil Nadu 2. Karnataka 3. Gujarat 4. Andhra Pradesh

9. Between which two years did the maximum amount of increase in sales tax revenue happen in the state of Maharashtra?

1. 96-97 to 97-98 2. 97-98 to 98-99 3. 98-99 to 99-00 4. 99-00 to 00-01

10. The tax increase was exactly the same amount in two successive pairs of years for which state?

1. Karnataka 2. West Bengal 3. Uttar Pradesh 4. Tamil Nadu

11. Which of the following states had a constant rank over the years?

1. Andhra Pradesh 2. Karnataka 3. Tamil Nadu 4. Uttar Pradesh

12. There are two boys, both of whose ages are less than 10 years. The age of the younger boy is the cube root of the product of the ages of the younger and elder boy. The number formed by placing the younger boy's age to the left of the elder boy's age represents the age of the younger boy's father. On dividing the number formed by placing the elder boy's age to the left of the younger boy's age, by two, we get the age of the younger boy's mother. The difference in the ages of the mother and the father of the younger boy is 3. What is the age of the younger boy?

1. 3 2. 4 3. 2 4. None of these

13. Flight A and B with equal capacity are scheduled to take off from an airport. Passengers are waiting in a hall of capacity 200. The hall is currently having 10% of the seats unoccupied. 40 % of the waiting passengers are ladies. Both the flight's put together have a total capacity equal to 4/3 rd of the total passengers who are waiting. Half the passengers who board flight A are women. After the boarding of flight A, 60% of the seats in the hall are empty. For every 20 passengers now in the hall, there is an airhostess in flight A. What is the ratio of empty seats in Flight B to the number of airhostesses in flight A?

1. 10:1 2. 5:1 3. 20:1 4. 1:1

DIRECTIONS ***for questions 14 to17 :*** 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 kmph speed;
2 green lights = go at 40 kmph speed;
1 green lights = go at 20 kmph speed.

A motorist starts at a point on a road and follows all traffic signals literally. 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 & 2 green lights;
after 15 minutes, 2nd signal – 1 red light;
after half an hour, 3rd signal – 1 red & 3green lights;
after 24 minutes, 4th signal – 2 red & 2 green lights;
after 15 minutes, 5th signal – 3 red lights;

14. The total distance travelled by the motorist is

1. 90 km 2. 100 km 3. 120 km 4. None of these

15. The radial distance of the end from the start point is

1. 45 km to the North of Starting Point
2. 30 km to the east of Starting Point
3. 50 km to the North East of Starting Point
4. 45 km to the North West of Starting Point

16. If at the first signal he had faced one red and two green, what would have been his final position?

1. 30 km to West and 20 km to the South
2. 30 km to West and 40 km to North
3. 50 km to East and 30 km to South
4. 30 km to East

17. If the car were headed in the Southern direction to start with, what would have been the final position?

1. 30 km to East and 40 km to South
2. 50 km to East and 40 km to South
3. 30 km to West and 40 km to South
4. 50 km to West and 20 km to North

DIRECTIONS f*or Questions 18-25* : Each question is followed by two statements A and B. answer the question using the following instructions.

Choose 1 If the question can be answered by using one of the statements alone, but cannot be answered using the other statement alone.
Choose 2 If the question can be answered by using either statement alone.
Choose 3 If the question can be answered by using both statements together, but cannot be answered using either statement alone.
Choose 4 If the question cannot be answered even by using both statements together.

18. In hockey, India were down by 2 goals,5 minutes remained. Did they win?
(A) Deepak Thakur the Indian striker scored 3 goals in the last 5 minutes.
(B) Korea scored a total of 3 goals in the match.

1. 1 2. 2 3. 3 4. 4

19. 4 students were added to a dance class. Will the teacher be able to divide them into groups of 8?
(A) If 12 students were added she would be able to divide them in groups of 8.
(B) Currently no. of students not divisible by 8.

1. 1 2. 2 3. 4 4. 3

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

1. 1 2. 2 3. 3 4. 4

21. Initial MRP offers discount of 20%. What was cost?
(A) If MRP marked down by 10%, dress sold at a profit of 10$.
(B) Dress was sold for 50$

1. 1 2. 2 3. 3 4. 4

22. Is 500 average score in GMAT?
(A) Half the class scored above 500 and the other half below 500.
(B) 200 and 800 were the lowest and highest scores.

1. 1 2. 2 3. 3 4. 4

23. Is $|x - 2| < 1$?
(A) $|x| > 1$
(B) $|x - 1| < 2$

1. 1 2. 3 3. 2 4. 4

24. In a club Russian or French or both are spoken. How many speak only French?
(A) Total 300 members,196 speak both languages.
(B) 58 speak only Russian.

1. 1 2. 2 3. 3 4. 4

25. Sum of 38500 divided among Jeevan ,Prakash and Gulab. Who got the least?
(A) 9 times Jeevan's share is two times the sum of Prakash and Gulab's share
(B) 11 times Prakash's share is 3 times the sum of Jeevan and Gulab's share

1. 1 2. 2 3. 3 4. 4

26. Four students (Ashish, Dhanraj, Felix and Sameer) sat for the Common Entrance Exam for Management (CEEM). One sutdent got admission offer from three National Institutes of Management (NIM), another in two NIMs, the third in 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 admission as Ashish.
ii) The one who got 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 medical doctor got the most number of admission offers.

Which of the following statements is necessarily true?

1. Ashish is a chartered accountant and got offer for admission in three NIMs.
2. Dhanraj is a medical doctor and got admission offers in one NIM.
3. Sameer is an economist who got admission offers in two NIMs
4. Felix who is not an engineer did not get any offer for admission.

27. 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.

1. Alam started with more than jugraj.
2. Sandeep spent Rs. 1.50 more than Daljeet.
3. Ganesh started with more money than just only one other person.
4. Daljeet started with 2/3 of what Sandeep started with.
5. Alam spent the most, but did not end with the least.
6. Jugraj spent the least and ended with more than Alam or Daljeet.
7. Ganesh spent Rs. 3.50
8. Alam spent 10 times more than what Ganesh did.

In the choices given below, all statements except one are false. Which of the following statements can be true?

1. Alam started with Rs 40 and ended with Rs. 9.50.
2. Sandeep started with Rs 30 and ended with Rs. 1.00.
3. Ganesh started with Rs 20 and ended with Rs. 4.00.
4. Jugraj started with Rs. 10 and ended with Rs 7.00.

28. In a hospital there were 200 Diabetes, 150 Hyperglycaemia and 150 gastro- enteritis patients. Of these, 80 patients were treated for both Diabetes and Hyperglycamia. Sixty patients were treated fro Gastro-enteritis and hyperglycamia, while 70 were treated for Diabetes and gastro-enteritis. Some of these patients have all the three diseases. Doctor Dennis treats patients with only Diabetes. Doctor Hormis treats patients with only Hyperglycamia and Doctor Gerard treats patients with only Gastro-enteritis. Doctor Paul is a generalist. Therefore, he can treat patients with multiple diseases. Patients always prefer a specialist for their disease. If doctor Dennis had 80 patients, then the other three doctors can be arranged in terms of the number of patients treated as:

1. Paul > Gerard > Hormis
2. Paul > Hormis > Gerard
3. Gerard > Paul >Hormis
4. None of these

29. 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.

One of the children is Bipin.
Loyola School's contestant did not come first.
Little Flower's contestant was named Riaz.
Convent school is not in Hyderabad.
The contestant from Pune took third place.
The contestant from Pune is not for Loyola School.
Convent School's contestant from Bangalore did not come first.
Convent School's contestant's name is not Balbir.

Which of the following statements is true?

1. 1st prize: Riaz (Little Flowers), 2nd prize: Bipin (Convent), 3rd prize: Balbir (Loyola)
2. 1st prize: Bipin (Convent), 2nd prize: Riaz (Little Flowers), 3rd prize: Balbir (Loyola)
3. 1st prize: Riaz (Little Flower), 2nd prize: Balbir (Loyola), 3rd prize: Bipin (Convent).
4. 1st prize: Bipin (Convent), 2nd prize: Balbir (Loyola), 3rd prize: Riaz (Little Flowers)

DIRECTIONS ***for question 30 to 32:*** Answer the questions based on the table given below.
The following table provides data on the different countries and location of their capitals. (the data may not much the actual Latitude, Longitudes) Answer the following questions on the basis of this table.

	Country	**Capital**	**Latitude**	**Longitude**
1.	Argentina	Buenes Aires	34.30 S	58.20 E
2.	Austria	Canberrs	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 Lampur	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.	Suadi 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

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

1. 15% 2. 20% 3. 25% 4. 30%

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

1. exceeds the number of cities whose names being with a consonant and are in the southern hemisphere by 1.
2. exceeds the number of cities whose names being with a consonant and are in the southern hemisphere by 2.
3. Is less than the number of cities whose names being with a consonant and are in the east of the meridian by 1.
4. Is less than the number of countries whose name begins with a consonant and are in the east of the meridian by 3.

32. 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:

1. 3:2 2. 3:3 3. 3:1 4. 4:3

DIRECTIONS for Question 33 to 36: Answer these questions based on the table given below.
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 Earnings				Total Days			
Emp. No	**Complex**	**Medium**	**Simple**	**Total**	**Complex**	**Medium**	**Simple**	**Total**
2001147	82.98		636.53	719.51	3.00	0.00	23.00	26.00
2001148	51.53		461.73	513.26	3.33	1.67	16.00	21.00
2001149	171.17		79.10	250.81	5.50	4.00	8.50	18.00
2001150	100.47		497.47	597.95	6.00	4.67	7.33	18.00
2001151	594.43	159.64		754.06	9.67	13.33	0.00	23.00
2001156	89.70			89.70	8.00	0.00	1.00	9.00
2001158	472.31	109.73		582.04	1.39	9.61	0.00	11.00
2001164	402.25	735.22	213.67	1351.14	5.27	12.07	0.67	18.00
2001170	576.57			576.57	21.00	0.00	0.00	21.00
2001171	286.48	6.10		292.57	8.38	4.25	0.38	13.00
2001172	512.10	117.46		629.56	10.00	8.50	3.50	22.00
2001173	1303.88			1303.88	25.50	0.00	0.00	26.00
2001174	1017.94			1017.94	26.00	0.00	0.00	26.00
2001179	46.56	776.19		822.75	2.00	19.00	0.00	21.00
2001180	116.40	1262.79		1379.19	5.00	19.00	0.00	24.00

33. The number of empolyees who have earned more than 50 rupees per day in complex operations is:

1. 4 2. 3 3. 5 4. 6

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

1. 4 2. 5 3. 6 4. 7

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

1. 2001180 2. 2001164 3. 2001172 4. 2001179

36. 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:

1. 2 2. 3 3. 5 4. 7

DIRECTIONS ***for questions 37 – 44*** **:** Answer these questions based on the table below.
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 the years 1998 – 2000.

REPSOL YPF'S Operations of Oil and Gas Producing Activities.

S. No	Item	Year	Total world	Spain	North Africa& Middle East	Argen -tina	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)= [(1) – (2)]	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 & 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 after Taxes & charges [= (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

Based on the table above answer the following questions.

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

1. 2 2. 3 3. 4 4. None of these

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

1. 1 2. 2 3. 3 4. None of these

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

1. 3 2. 4 3. 5 4. None of these

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

1. 0 2. 1 3. 2 4. None of these

41. If profitability is defined as the ratio of net income after the taxes and charges to expenses, which of the following statement is true?

1. The Far East operations witnessed its highest profitability in 1998.
2. The North Sea operations increased its profitability from 1998 to 1999.
3. The operations in Argentina witnessed a decrease in profitability from 1998 to 1999.
4. Both 2 and 3 are true.

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

1. North Africa & Middle East 2. Spain
3. Rest of Latin America 4. Far East

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

1. Spain 2. Argentina 3. Far East 4. None of these

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

1. The operations in Spain had the best efficiency in 2000.
2. The Far East operations witnessed an efficiency improvement from 1999 to 2000.
3. The North Sea operations witnessed an efficiency improvement from 1998 to 1999.
4. In the year 1998, the operations in Rest of Latin America were the least efficient.

DIRECTIONS ***for questions 45-50*** **:** Answer these questions based on the tables given below.

There are 6 refineries, 7 depots and districts. The refineries are BB, BC, BD, BE, BF & BG. The depots are AA, AB, AC, AD, AE, AF, & AG. The district 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 ne unit from depot to a district.

TABLE A

	BB	**BC**	**BD**	**BE**	**BF**	**BG**
AA	928.2	537.2	567.8	589.9	589.9	800.1
AB	311.1	596.7	885.7	759.9	759.9	793.9
AC	451.1	0	320.1	780.1	720.7	1000.1
AD	371.1	150.1	350.1	750.1	650.4	980.1
AE	1137.3	314.5	0	1157.7	1157.7	1023.4
AF	617.1	516.8	756.5	1065.9	1065.9	406.3
AG	644.3	299.2	537.2	1093.1	1093.1	623.9

TABLE B

	AA	**AB**	**AC**	**AD**	**AE**	**AF**	**AG**
AAA	562.7	843.2	314.5	889.1	0	754.8	537.2
AAB	532.7	803.2	284.5	790.5	95.2	659.6	442
AAC	500.7	780.2	0	457.3	205.7	549.1	331.5
AAD	232.9	362.1	286.2	275.4	523.6	525.3	673.2
AAE	345.1	268.6	316.2	163.2	555.9	413.1	227.8
AAF	450.1	644.3	346.2	372.3	933.3	402.9	379.1
AAG	654.5	0	596.7	222.7	885.7	387.6	348.5
AAH	804.1	149.6	627.2	360.4	1035.3	537.2	498.1
AAI	646	255	433.5	137.7	698.7	112.2	161.5

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

1. 95.2 2. 0 3. 205.7 4. 284.5

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

1. 0 2. 284.5 3. 95.2 4. None of these

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

1. 284.5 2. 311.1 3. 451.1 4. None of these

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

1. 765.5 2. 1137.3 3. 1154.3 4. None of these

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

1. 63 2. 42 3. 54 4. 378

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

1. 2172.6 2. 2193.0 3. 2091.0 4. None of these

SECTION II
No of questions – 50

51. $7^{6n} - 6^{6n}$, where n is an integer > 0, is divisible by

1. 13 2. 127 3. 559 4. All of these

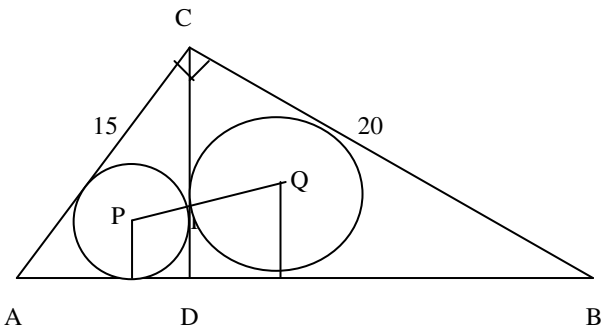
52. In how many ways is it possible to choose a white square and a black square on a chess board so that the squares must not lie in the same row or column?

1. 56 2. 896 3. 60 4. 768

53. 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?

1. $m \geq \min(u,v,w)$ 2. $m \geq \max(u,v,w)$ 3. $m < \min(u,v,w)$ 4. None of these

54.



In the above figure, ACB is a right angled triangle. CD is the altitude. Circles are inscribed within the triangles ACD and BCD. P and Q are the centres of the circles. The distance PQ is

1. 5 2. $\sqrt{50}$ 3. 7 4. 8

55. Three travelers are sitting around a fire, and are about to have 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 eight coins. He offers to pay for some bread. They agree to share the loaves equally among the three travelers, and the third traveler will pay 8 coins for his share of the eight loaves. All loaves were of the same size. The second traveler (who had three loaves) suggests that he pays three coins, and the first traveler be paid eight coins. The first traveler says that he should get more than five coins. How much should the first traveler get?

1. 5 2. 7 3. 1 4. None of these

56. A piece of strings is 40 cm long. It is cut into 3 pieces. The longest piece is 3 times as long as the middle sized piece and the shortest piece is 23 cm shorter than the longest piece. Find the length of the shortest piece.

1. 27 cm 2. 5 cm 3. 4 cm 4. 9 cm

57. A train approaches a tunnel AB. Inside the tunnel 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 towards the exit B, the train catches the cat exactly at the exit. What is the ratio of speed of the train to that of the cat?

1. 3:1 2. 4:1 3. 5:1 4. None of these

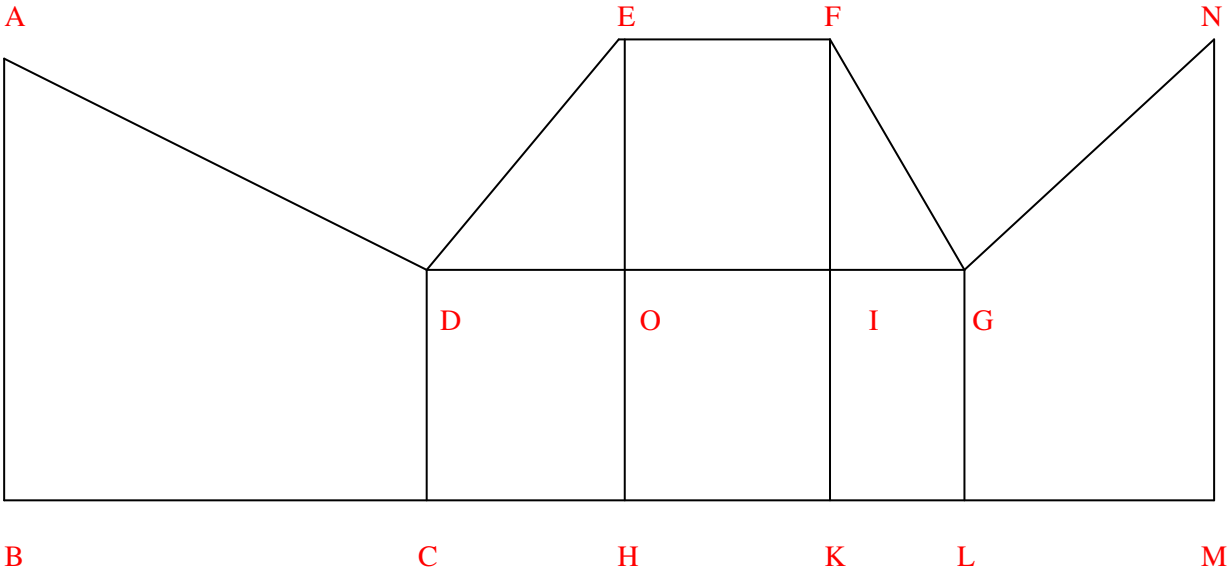
58. Six persons are playing a card game. Suresh is facing Raghubir who is to the left of Ajay and to the right of Pramod. Ajay is to the left of Dhiraj. Yogendra is to the left of Pramod. If Dhiraj exchanges his seat with Yogendra and Pramod exchanges with Raghubir, who will be sitting to the left of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

1. Yogendra 2. Raghubir 3. Suresh 4. Ajay

59. It takes six technicians a total of 10 hours to build a new server for Direct Computers, with each working at the same rate. If 6 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 complete?

1. 6.40 pm 2. 7:00 pm 3. 7:20 pm 4. 8:00 pm

DIRECTIONS *for questions 60 and 61*: Answer these questions on the diagram below. In the diagram below,
$\angle ABC = 90° = \angle DCH = \angle DOE = \angle EHK = \angle FKL = \angle GLM = \angle LMN$. AB = BC = 2 CH = FK = 2 HK = 4 KL = 2LM = MN.



60. The magnitude of $\angle FGO$ is

1. 30° 2. 45° 3. 60° 4. None of these

61. The ratio of the two quadrilaterals ABCD and DEFG is

1. 1:2 2. 2:1 3. 12:7 4. None of these

62. Mayank, Mirza, Little and Jaspal purchase a motorcycle for $ 60. Mayank pays half the amount paid by Mirza, Little and Jaspal. Mirza pays one third the amount paid by Mayank, Little and Jaspal. Little pays one fourth the amount paid by Mayank, Mirza and Little. How much did Jaspal pay?

1. $15 2. $13 3. $17 4. None of these

63. In a jewellery store there are 3 watchmen. A thief however manages to steal in and break away with a heist of diamonds. On the way out he meets the first watchman. He gives him half the number of diamonds he has and two more. A similar story happens when he meets the remaining two watchmen. He is now left with only one diamond. How many diamonds did he have originally?

1. 40 2. 36 3. 25 4. None of these

64. Ajay has to mow a rectangular lawn with dimensions 20 m and 40 m. He has a lawn mower, which can mow a strip of 1 m at a time. He starts from a corner and moves parallel to the sides and towards the centre. How many rounds would he have made of the lawn, when half of the lawn has been mowed?

1. 2.5 2. 3.5 3. 3.8 4. 4

65. x, y and z are real numbers, such that $x + y + z = 5$ and $xy + yz + zx = 3$. What is the maximum value that x can take?

1. 5/3 2. $\sqrt{19}$ 3. 13/3 4. None of these

66. 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?

1. $X_n > 0$ if n is even 2. $X_n > 0$ if n is odd 3. $X_n < 0$ if n is even 4. None of these

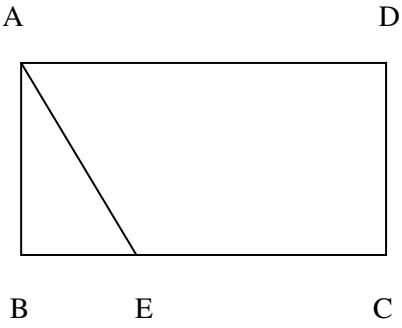
67. S and D are two numbers. D is a two digit number such that the sum of squares of the individual digits is equal to S. The difference between S and D is 13. What is the value of D?

1. 24 2. 54 3. 34 4. 45

68. There is a road that connects two cities A and B. Along the road there are three gutters 1, 2 and 3. The distance of city A from gutter 1 is the same as city B from gutter 2. Also the distance between gutters 2 and 3 is twice the distance between gutter 1 and 2. A man is found injured in an accident near gutter 3. If he is not given medical treatment in 40 minutes he will die. An ambulance leaves from city A and travelling at 30 kmph reaches gutter 1 in 5 minutes. After this it doubles its speed. It takes 1 minute for the patient to be loaded and unloaded into the ambulance. How much time will be available for the doctors to treat the patient when he arrives at the hospital?

1. 4 minutes 2. 2.5 minutes 3. 1.5 minutes 4. The patient dies

69.



Referring to the diagram above, there is a rectangle ABCD. The area of triangle ABE is 7 sq.cm. Also EC = 3(BE). What is the area of rectangle ABCD?

1. 21 2. 28 3. 42 4. 56

70. On a straight road XY, 100 m long, 5 heavy stones are placed two metres 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 (in metres) is:

1. 472 2. 422 3. 744 4. 860

71. 4 horses are tied at the corners of a square of side 14m. The adjacent horses just reach each other. In the central area there is a circular pond having area 20 sq.m. What is the area (in sq. m) that will be left ungrazed in the field?

1. 22 sq. m 2. 42 sq. m 3. 84 sq. m 4. 168 sq. m

72. If $f(x) = \log [(1+x)/(1-x)]$, then $f(x) + f(y)$ is

1. $f(x + y)$
2. $f\{(x + y) / (1 + xy)\}$
3. $(x + y) f\{1 / (1 + xy)\}$
4. $f(x) + f(y) / (1 + xy)$

73. Two circles of radii 15 and 20 cm have their centres 25 cm apart. What is the length of their common chord?

1. 24 cm 2. 25 cm 3. 15 cm 4. 20 cm

74. In a triangle ABC, bisector of angle A meets side BC at D. If AB = 4, AC = 3, and $\angle A = 60°$, what is the length of AD?

1. $2\sqrt{3}$ 2. $12\sqrt{3} / 7$ 3. $15\sqrt{5} / 7$ 4. $6\sqrt{3} / 7$

75. There are 10 positive numbers such that $n_1 < n_2 .... < n_{10}$. Then how many triplets can be chosen such that 1st number < 2nd number < 3rd number?

1. 45 2. 90 3. 120 4. 180

76. A pumping station has 4 pumps. 3 small pumps, each of which can pump at a rate that is equal to 2/3rd the rate of one big pump. If the big pump and all the small pumps pump all together, what will be the time taken as a fraction of the time that the big pump would take pumping alone?

1. 4/7 2. 1/3 3. 2/3 4. 3/4

77. 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?

1. 240 2. 300 3. 400 4. None of these

DIRECTIONS ***for questions 78 and 79***: Answer the questions which are based on the information given below.

A boy is asked to put in a basket one mango 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

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

1. 1 2. 4 3. 3 4. 2

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

1. 9 2. 8 3. 11 4. 10

80. The area of triangle whose vertices are (a, a), $(a + 1, a + 1)$, $(a + 2, a)$ is:

1. a^3 2. 1 3. $2a$ 4. $2^{1/2}$

81. Instead of walking along two 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:

1. 1/2 2. 2/3 3. 1/4 4. ¾

82. Only a single rail track exists between station 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 passenger train S is half that of E. On a particular day N leaves for station B from station A, 20 minutes behind the normal schedule. In order to maintain the schedule both N and S increased their speed. If the super fast train doubles its speed, what should be the ratio (approximately) of the speed of passenger train to that of the super fast train so that passenger train S reaches exactly at the scheduled time at station A on that day?

1. 1:3 2. 1:4 3. 1:5 4. 1:6

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

1. 96 2. 53 3. 43 4. None of these

84. Shyam visited Ram on 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?

1. 32 2. 24 3. 30 4. None of these

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

1. 1 2. 2 3. 3 4. None of these

86. A car rental agency has the following terms. If a car is rented for 5 hours or less, then the charge is Rs. 60 per hour or Rs. 12 per kilometer whichever is more. On the other hand, if the car is rented for more than 5 hours, the charge is Rs. 50 per hour or Rs 7.50 per kilometer whichever is more. Sushil rented a car from this agency, drove it for 30 kilometers and ended up paying Rs. 350. For how many hours did he rent the car?

1. 4 2. 5 3. 6 4. None of these

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

1. Less than 10 2. 10 3. 15 4. More than 15

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

1. $L(x, y) = R(x, y)$ 2. $L(x, y) > R(x, y)$ 3. $L(x, y) < R(x, y)$ 4. none of these

89. 10 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

1. 56 2. 255 3. 1024 4. Not unique

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

1. 1 2. 16 3. 14 4. None of these

91. 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

1. None 2. 1 3. 2 4. 1 or 2

92. At a bookstore, **"MODERN BOOK STORE"** is flashed using neon lights. The words are individually flashed at intervals of 2 ½, 4 ¼, 5 ⅛ seconds 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 is:

1. 49.5 seconds 2. 73.5 seconds 3. 1744.5 seconds 4. 855 seconds

93. Three pieces of weight 4 ½ lbs., 6 ¾ lbs. and 7 $\frac{1}{5}$ lbs. 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?

1. 54 2. 72 3. 20 4. None of these

94. 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?

1. 80 2. 76 3. 41 4. 53

DIRECTIONS ***For questions 95 and 96:*** Answer these questions based on the information given below.

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.

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

1. 7920 2. 330 3. 14640 4. 419430

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

1. 990 2. 2730 3. 12870 4. 15600

97. If $pqr = 1$, then the value of the expression $1/(1 + p + q^{-1}) + 1/(1 + q + r^{-1}) + 1/(1 + r + p^{-1})$ is equal to

1. $p + q + r$ 2. $1/(p + q + r)$ 3. 1 4. $p^{-1} + q^{-1} + r^{-1}$

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

1. 486 2. 1086 3. 728 4. None of these

99. 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 $1/\{2n(n + 3)\}$, $(n = 1, 2,..)$. Then S equals

1. $2 - x/(1 - x)^3$ 2. $2 - x/(1 + x)^3$ 3. $2 + x/(1 - x)^3$ 4. $2 + x/(1 + x)^3$

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

A. $x = 2y$ B. $x = 2z$ C. $2x = z$

1. Only A 2. Only B and C 3. Only A and B 4. None of these

SECTION III
No of questions – 50

DIRECTIONS ***for questions 101 to 105:*** For the word given at the top of each table, match the dictionary definitions on the left (**A,B,C,D**) with their corresponding usage on the right (**E,F,G,H**). Out of the four possibilities given in the boxes below the table, select the one that has all the definitions and their usages correctly matched.

101. Measure

	Dictionary definition		Usage
A	Size or quantity found	E	A measure was instituted to prevent outsiders from entering the campus
B	Vessel of standard capacity	F	Sheila was asked to measure each item that was delivered
C	Suitable action	G	The measure of a cricket pitch is 22 yards
D	Ascertain extent or quantity	H	Ramesh used a measure to take out 1 litre of oil

1.	**2.**	**3.**	**4.**
A – H B – F C – E D – G	A – G B – E C – F D – H	A – G B – H C – E D – F	A – F B – H C – E D – G

102. Bound

	Dictionary definition		Usage
A	Obliged, constrained	E	Dinesh felt bound to take a walk when the discussion turned to kickbacks
B	Limiting value	F	Buffered by contradictory forces, he was bound to lose his mind
C	Move in a specific direction	G	Vidya's story strained the bounds of credibility
D	Destined or certain to be	H	Bound for a career in law, Jyoti was reluctant to study Milton

1.	**2.**	**3.**	**4.**
A – F B – H C – G D – E	A – E B – G C – H D – F	A – E B – H C – F D – G	A – F B – G C – E D – H

103. Catch

	Dictionary definition		Usage
A	Capture	E	All her friends agreed that Prasad was a good catch
B	Grasp with sense of mind	F	The proposal sounds good, but where's the catch?
C	Deception	G	Hussain tries to catch the spirit of India in his painting
D	Thing/person worth trapping	H	Sorry, I could not catch you

1.	**2.**	**3.**	**4.**
A – H B – F C – E D – G	A – F B – G C – E D – H	A – G B – F C – E D – H	A – G B – H C – F D – E

104. Deal

	Dictionary definition		Usage
A	Manage, attend to	E	Dinesh insisted on dealing the cards
B	Stock, sell	F	This contract deals with hand made cards
C	Give out to no of people	G	My brother deals in cards
D	Be concerned with	H	I decided not to deal with hand made cards

1.	**2.**	**3.**	**4.**
A – F B – E C – G D – H	A – H B – G C – E D – F	A – F B – H C – G D – E	A – H B – E C – G D – F

105. Turn

	Dictionary definition		Usage
A	Give new direction to	E	It was now his turn to be angry
B	Send	F	Leena never turned away a beggar
C	Change in form	G	Ashish asked Laxman to turn his face to the left
D	Opportunity coming successively for each person	H	The old school building was turned into a museum.

1.	**2.**	**3.**	**4.**
A – H B – E C – F D – G	A – G B – F C – E D – H	A – G B – E C – F D – H	A – G B – F C – H D – E

DIRECTIONS ***for questions 106 to 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 sequences from amongst the sentences from among the given choices to construct a coherent paragraph.

106.
A. Branded disposable diapers are available in 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 because they are available only at a corresponding supermarket chain.
D. So, the demand for branded diapers at a particular store may be quite price sensitive.
E. For instance, only Save-On Drugs stores sell Save-On Drugs diapers.
F. Then, the stores should set higher incremental margin percentage for private label diapers.

1. ABCDEF 2. ABCEDF 3. ADBCEF 4. AEDBCF

107.
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 sense of profitability and a willingness to make tough trade-offs 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 it's distinctive position.
F. When a companies activities fit together as a self reinforcing system, any competitor wishing to imitate a strategy must replicate the whole system.

1. ACEDBF 2. ACBDEF 3. DCBEFA 4. ABCEDF

108.
A. As officials, their vision of a country shouldn't run beyond that of local people.
B. Ambassadors have to choose their words.
C. To say what they feel they have to say, they are denying 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.

1. BCEDA 2. BEDAC 3. BEADC 4. BCDEA

109.
A. "This face off will continue for several months given the strong conviction on either side," say 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 the empact of drought.
C. The recent revivals of the rains had led to the emergence of a line of divided between the two.
D. The state governments, on the other hand, allege that the Centre is a 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 state, in the late July and early August.

1. EBCDA 2. DBACE 3. BDCAE 4. ECBDA

110. A. This fact was established in the 1730s by French survey expeditions 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 the 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.

1. BECAD 2. BEDCA 3. EDACB 4. EBDCA

DIRECTIONS ***for questions 111 to 116:*** Fill the gaps in the passages below with the most appropriate word from the options given for each gap. The right words are ones used by the author. Be guided by the authors overall style and meaning when you choose the answers.

Von Neumann and Morgenstern assumed a decision framework in which all options are thoroughly considered, each option being independent of others, with numerical values assigned for the utility of each option's outcome (these outcomes reflecting, in turn, all possible combinations of choices). The decision is made to maximize the expected utility.

(111)……., such a model reflects a major simplification of the way decisions are made in real world. Humans are not able to process information as quickly and effectively as the model assumes; they tend not to think (112)..……., as easily as the model calls for; they often deal with a particular option without really assessing its (113)……. , and when they do assess alternatives, they may be nebulous about their criteria of evaluation.

111. 1. Regrettably 2. Firstly 3. Obviously 4. Apparently

112. 1. Quantitatively 2. Systematically 3. Scientifically 4. Analytically

113. 1. Implications 2. Disadvantages 3. Utilities 4. Alternatives

In a large company, (114)…… people is about as common as using a gun or a switch blade to (115)……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 they firing is done, it's often done clumsily, with far worse side effects than are necessary.

Do the world class software organization 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 (116)…… such a phenomenon in the first place.

114. 1. Dismissing 2. Punishing 3. Firing 4. Admonishing

115. 1. Resolve 2. Thwart 3. Defeat 4. Close

116. 1. Derived 2. Engineered 3. Produced 4. Allowed

DIRECTIONS ***for question 117 to 120:*** *In* each of the question below, four different ways of writing a sentence are indicated. Choose the best way of writing the sentence.

117. 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 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.
D. The main problem with the nation 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.

1. A 2. B 3. C 4. D

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

1. A 2. B 3. C 4. D

119. 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 prices within a local market.
B. 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 prices in the local market.
C. The distinctive feature of tariffs and export subsidies is that they create a difference between prices at which **g**oods are traded on the world market and their prices within a local market.
D. The distinctive feature of tariffs and export subsidies is that they create difference across prices at which goods are traded on the world market and their prices within a local market.

1. A 2. B 3. C 4. D

120. 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 due to financial markets will also reduce the risks that private operators perceive and thereby encourage excessive hedging.
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 encourage excessive gambling.

1. A 2. B 3. B 4. D

DIRECTIONS ***for questions 121 to 125:*** For each of the words below, a contextual usage is provided. Pick the word from the alternatives given that is most appropriate in the given context.

121. **Opprobrium** – The police officer appears oblivious to the opprobrium generated by his blatantly partisan conduct.

1. Harsh criticism
2. Acute distrust
3. Bitter enmity
4. Stark oppressiveness

122. **Portend** – It appears to many that the US "war on terrorism" portends trouble in the Gulf.

1. Introduces
2. Evokes
3. Spells
4. Bodes

123. **Prevaricate** – When the videotape of her meeting was played back to her and she was asked to explain her presence there, she started prevaricating,

1. Speaking evasively
2. Speaking violenty
3. Lying furiously
4. Throwing tantrums

124. **Restive** – The crowd became restive, when the minister failed to appear even by 10 pm

1. Violent
2. Angry
3. Restless
4. Distressed

125. **Ostensible** – Manish's ostensible job was to guard the building at night.

1. Apparent
2. Blatant
3. Ostentatious
4. Insidious

DIRECTIONS for questions 126 to 150: *Each of the five passages given below is followed by questions. Choose the best answer for each question.*

PASSAGE I

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 twofold 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 archeological discoveries throwing fresh light on the obscure period or culture, or the revelations caused by the opening of archives 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 observer likely to extend into an indefinite future; now there is a teenage generation which knows nothing of it. Changes in the attitude 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 Muslim, who relied, as in the case of Sayyid Ghulam Hussain. on their own recollection of events and information from friends and men of affairs. Only a few like Abu'l Fazel 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 eighteenth century they were concerned with some aspect of Company policy, or, like Robert Orme in his Military Transaction gave a straight narrative in what was essentially a continuation of the Muslim tradition. In the early nineteenth 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 anglo-centric 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 Mukerji, 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. Panniker.

Along with 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 in 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 historian. It found its archpriest in H.H. Dodwell, its priestess in Dame Lilian Penson, and its chief shrine in the VolumeVI 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 fulfillment 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 part of signal consistent theme.

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

1. Indian historians began writing Indian history.
2. Trained historians began writing Indian history.
3. Writing India-centric Indian history began.
4. Indian history began to be written in India.

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

1. Dig afresh or dig deeper.
2. Start a new stream of thought or help establish a recently emerged perspective.
3. Begin or conduct further work on existing archeological sites to unearth new evidence.
4. Begin writing a history free of any biases.

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

1. Attitudes of the historians changed.
2. The raj was settled down.
3. Politics did not retain its past glamour.
4. Administrative history was based on solid ground.

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

1. Writing history as personal narratives
2. Writing history with political bias.
3. Writing non-political history due to lack of glamour.
4. Writing history by dissecting elements and integrating them again.

130. In the table given below, match the historians to the approaches taken by them:

A	Administrative	**E**	Robert Orme
B	Political	**F**	H. H. Dodwell
C	Narrative	**G**	Radha Kumud Mukerji
D	Economic	**H**	R. C. Dutt

1.	**2.**	**3.**	**4.**
A – F B – G C – E D – H	A – G B – F C – E D – H	A – E B – F C – G D – H	A – F B – H C – G D – E

PASSAGE 2

There are a seemingly endless variety of laws, restrictions, customs and tradition 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 percent of the world's population live in countries where it is allowed if the women's abortion is permitted on request. An additional 25 percent live in countries where it is allowed if the women's life would he endangered if she went to full term with her pregnancy. The estimate is that between 26 and 31 million legal abortions were performed in 1987. 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 us one of the prime issues facing the contemporary women's movement. They observe that the definition and control of women's reproductive freedom has 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, government 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 has been absent. Until the nineteenth 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 movement of the foetus could be felt. In 1800, drugs to induce abortions were widely advertised in local newspapers. By 1900, abortion was banned in every state except to save the life of the mother. The change was strongly influenced by the medical profession, which focussed its campaign ostensibly on health and safety issues for pregnant woman and the sanctity of life. Its position was also a means of control of nonlicensed 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 class 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 State through the first sixty-five years of the twentieth 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 lead a number of stales 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 legalized 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-choice’s are of the opinion that laws will not prevent women from having abortions and cite the horror stories of the past when many legalized abortion 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 choices and pro–life activists hold different world views regarding gender, sex and the meaning of parenthood. Moral positions are seen to be tied intimately to views on sexual behavior, the care of children and family life of the individual. Luker identifies "pro-choice" women as educated, affluent, and liberal. Their contrasting counterparts, "pro-life" women, support traditional concepts of women as wives and mothers. He wanted to sort out 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 twenty–year period were analyzed and over 200 interviews were held 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 by 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 center 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 represents the battleground for the justification of their respective views.

131. According to your understanding of the author's arguments which countries are more like- .

1. India and China.
2. Australia and Mongolia.
3. Cannot be inferred from the passage.
4. Both (1) and (2).

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

1. Medical professionals stressing the health and safely of women.
2. Influx of eastern and southern European immigrants.
3. Control of unlicensed medical practitioners.
4. A tradition of matriarchal control.

133. A pro-life woman would advocate abortion if:

1. The mother of an unborn child is suicidal.
2. Bearing a child conflicts with a woman's career prospects.
3. The mother becomes pregnant accidentally.
4. None of the above.

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

1. That the home is a "joint sphere" shared between men and women.
2. That reproduction is a matter of choice for women.
3. That men and women are equal.
4. Both 2 and 3

135. Two health tragedies affecting U.S. society in the 1960s led to:

1. A change in attitude to women’s right to privacy.
2. Retaining the anti-abortion laws with some exceptions.
3. Scrapping of anti-abortion laws.
4. Strengthening of the pro-life lobby.

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

1. Major patriarchal religions.
2. Countries with low population density
3. Medical profession.
4. None of the above.

PASSAGE 3

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 theology. 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? Is it 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 to 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 not 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:

1. reduce uncertanity and chaos
2. help us to cope with uncertainty and ambiguity
3. help us to find explantions for uncertainty
4. reduce the terror of cosmic loneliness

138. Based on this passage what can be conclude about the relation between philosophy and science

1. the two are antagonistic
2. the two are complementary
3. there is no relation between the two
4. philosophy derives from science

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

1. historian
2. philosopher
3. scientist
4. theologian

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

1. the universe has unity
2. the universe has a purpose
3. the universe is evolving towards a goal
4. none of the above

PASSAGE 4

Cells are the ultimate multitaskers: they can switch on genes and carry out 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 bustels with more traffic than Delhi roads, and, like all vehicals, the cells moving parts need engines.. Phycisists 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 Fibers, 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 5-foot-wide engine were as efficient, it would travel 170 to 340 kmph.

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 Malsudaira of the Massachusetts Institute of Technology explain, the engines in this case arc 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 3 inches (8 centimeters) 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 re-create them for other purposes."

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

1. Controls over the movement of genes within human systems
2. The understanding of nanotechnology
3. Arresting the growth of cancer in human being
4. The development of cures for a variety of dieases

142. The author has used several analogies to illustrate his arguments 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 track
c) genes and canoes
d) vorticellids and ratchets

1. a and b 2. b and c 3. a and d 4. a and c

143. Read the five statements below : a,b,c,d and e, from the option given select the one which includes a statement that is not represtative of an argument in the passage

a) sperms use spring like engines made of actin filament
b) myosin and kinesin are unrelated
c) nanotechnology researchers look for wasy to power molecule-sized devices
d) motor proteins help muscle contraction
e) the dynein motor is still poorly understood

1. a, b and c 2. c,d and e 3. a,d and e 4. a, c and d

144. Read the four statements below: a,b,c and d. From 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) cells, together, generate more power than the sum of power generated by them separately
d) vorticellid and the leaf fragment are connected by a calcium engine

1. a and b but not c 2. a and c but not d 3. a and d but not b 4. 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 include statements that are representative of arguments presented in the passage

a) myosin, kinesin and actin 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 of muscles
d) Ronald and Mahadevan are researchers at Massachusetts Institute of Technology

1. a and b but not c and d
2. b and c but not a
3. b and d but not a and c
4. a, b and c but not d

PASSAGE 5

If translated into English, most of the ways economists talk among themselves would sound plausible enough to poets, journalists, businesspeople, and other thoughtful though *noneconomical* 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 favorite 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 he 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. Game poets, though not scientists are serious thinkers about symbol; good historians, though not scientists, are serious thinker 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 speak.

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 mod 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 as announcer of "results" or a state of "conclusions" free of rhetoric -- speaks rhetorically. Does he try to persuade? It would seem so. Language, I just said 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, honored, 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 whey they go to the library or the laboratory as much as when they go to the office on 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 supply is controlled by the Federal Reserve.

Unfortunately, though, the conclusions are of more than academic interest. The conversations of classiest 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 gray 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 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

1. a and b 2. c and d 3. a and c 4. 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?

1. An election speech.
2. An advertisement jingle.
3. Dialogues in a play.
4. Commands given by army officers.

148. As used in the passage, which of the following is the closest meaning to the statements “The culture of the” conversation makes the words arcane"?

1. Economists belong to a different culture.
2. Only mathematicians can understand economists.
3. Economists tend to use terms unfamiliar the lay person, but depend on familiar linguistic forms
4. 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’?

1. Mysterious 2. Secret 3. Covert 4. Perfidious

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

1. The geocentric and the heliocentric views of the solar system are equally tenable.
2. The heliocentric view is superior because of better rhetoric.
3. Both views use rhetoric to persuade.
4. Scientists should not use rhetoric.

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Solutions Title Page

CAT – 2002

ANSWER KEY

1.	2	41.	2	81.	4	121.	1
2.	2	42.	2	82.	4	122.	4
3.	2	43.	4	83.	4	123.	1
4.	4	44.	4	84.	3	124.	3
5.	3	45.	2	85.	2	125.	1
6.	2	46.	3	86.	4	126.	3
7.	2	47.	2	87.	4	127.	2
8.	4	48.	1	88.	2	128.	3
9.	3	49.	4	89.	1	129.	4
10.	1	50.	2	90.	1	130.	1
11.	3	51.	4	91.	4	131.	1
12.	3	52.	4	92.	2	132.	4
13.	1	53.	3	93.	4	133.	4
14.	1	54.	2	94.	4	134.	4
15.	3	55.	2	95.	1	135.	2
16.	1	56.	3	96.	3	136.	4
17.	3	57.	2	97.	3	137.	2
18.	4	58.	3	98.	3	138.	2
19.	1	59.	4	99.	1	139.	4
20.	1	60.	4	100.	3	140.	2
21.	3	61.	3	101.	3	141.	4
22.	4	62.	2	102.	2	142.	1
23.	3	63.	2	103.	4	143.	1
24.	3	64.	3	104.	2	144.	2
25.	3	65.	2	105.	4	145.	1
26.	3	66.	4	106.	3	146.	3
27.	4	67.	2	107.	1	147.	4
28.	1	68.	3	108.	3	148.	3
29.	3	69.	4	109.	4	149.	1
30.	2	70.	4	110.	2	150.	3
31.	4	71.	1	111.	3		
32.	1	72.	2	112.	1		
33.	3	73.	1	113.	4		
34.	4	74.	2	114.	3		
35.	1	75.	3	115.	1		
36.	4	76.	2	116.	4		
37.	3	77.	1	117.	3		
38.	2	78.	4	118.	2		
39.	2	79.	3	119.	3		
40.	2	80.	2	120.	2		

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EXPLANATIONS

1.	The price per kg for the 4 options will be prop to 17/15, 20/11, 16/15 and 20/26. It is the highest for the second option
2.	= 0.16*5760 / 0.15 * 1055 = 5.6
3.	R9 is the crop that is common
4.	Option (4) is correct. Eg R2,R6,R1,R4 etc.
5.	R9, R10 and R11 are the crops
6.	In this set, first write down the ranks on the paper itself. Then have a look at the questions WB, TN, MA, KA, and AP are such states. Hence answer is 5.
7.	UP has changed 2 times.
8.	A closer scrutiny makes it clear that only in the case of AP, the revenue has more than doubled where as others have increased at a rate which is lower than that of AP. So AP's share has definitely increased.
9.	Check from figures given - it is between 98-99 and 99-00.
10.	It was for KA between 00 and 99 and 01 and 00 increase of 574 cr
11.	Check from data collated for first question of the set.
12.	Check using the options. The age of the husband and wife come to be 24 and 21. So younger boy is 2 years old. There are two possible age of the two brothers. Either (2 and 4) or (3 and 9). Only 2 and 4 satisfies the case. Option (3)
13.	There are a total of 180 people in the hall. Total capacity is 240. After flight A people embark, 80 people remain. Capcity of flight A is 120, so that of B is also 120. No of seats vacant in B is 40. No of airhostesses in A is 80/20 = 4. So ratio of vacancies to hostesses is 10:1
14.	The foll table will help: Signal Speed Distance Direction 0 20 10 km N 1 40 10 km W 2 40 20 km N 3 100 40 km E 4 40 10 km N Total distance = 10 + 10 + 20 + 40 + 10 = 90 km Table not visible in site.
15.	The distance will be $(30^2 + 40^2)^{0.5}$ = 50 km - approx to the NE Square sign is coming as 302+402
16.	It starts with 1 Green and then in the 1st signal it becomes 1 red and 2 green.The new distances become 10 N, 10 E, 20 S, 40 W and 10 S. So final position of 30 W and 20 S
17.	Can be done on similar lines to above questions.
18.	Using both the statements the score before the last 5 min started could be either 2-0 or 3-1. In the first case there is a draw, in the second case india wins. So option is (4).
19.	If it is divisible by adding 12, then it will be divisible by adding 4 (12-4=8)
20.	In first option we get x/y + y/x = 2, which is only possible if x=y.
21.	Only after combining both the statements the question can be answered. First will give cost relation with SP. Second will give SP.
22.	There is no exact relationship between the median and the average.
23.	From Stmt B we get 2 ranges ($-1 < x < 3$) and from statement A we get ($x < -1$ or $x > 1$). Individually both cannot answer , but when we combine we get ($1 < x < 3$) which is sufficient to answer the questions.
24.	No of people speaking French only is 300 -(196 + 58) - so 3 is the answer.
25.	From the 2 equations we can find the value of J and P in terms of G. So we can find out who received the lowest (although not the exact values)
26.	The doctor got the most no. of admission offers i.e. 3 Ashish isn't engg. Sameer is an economist. Dhanraj isn't engg. Hence Felix is an engg.. Ashish can't be a doctor, since he didn't got the maximum no. of offers. Hence Dhanraj is a doctor, while Ashish is a C.A. The person getting 2 offers is neither Dhanraj nor C.A. i.e. Ashish. Felix also didn't get 2 offers ,since he got less offers than Ashish. Hence Sameer got offers from 2 IIMs Hence, No of offers : 0 1 2 3 Student : Felix Ashish Sameer Dhanraj Degree : Engg C.A. Econ. Doctor. Hence (3).
27.	4th option.
28.	1st option
29.	3rd option
30.	1 out of 5 countries located within in 10E & 40E line lie in the southern Hemisphere. Hence 20%.
31.	4th option as there are 10 cities which begin with a consonant and lie in the northern hemisphere and 13 of the other kind.
32.	Argentina, Australia, Equador and Ottawa, Accra. 3:2, 1st option.
33.	Following are the worker nos. Who have earned more than 50 rupees per day in difficult operation. 2001151,2001158,2001164, 2001172,2001173 i.e. 5 hence 3rd option.
34.	There are 7 workers who satisfy the given condition whose no. are given below. 2001147,2001151,2001172,2001173,2001174,2001179,2001180. Hence 4th option.
35.	Among the options given 2001180 satisfies the given condition. Hence 1st option.
36.	There are 7 such workers whose no. are given below. 2001148, 2001149, 2001150, 2001151,2001158, 2001171,2001172
37.	3374*5/100 =168.7 .There are 4 such operation on Spain ,Latin America, North sea, Rest of world. Hence (3).

38.	There are 2 such operation , Namely Spain ,Rest of Latin America. Hence (2).
39.	There are 4 such operations, namely, North Africa, Argentina, Rest of Latin America & Far East. Hence (2).
40.	Average % increase = (1375 - 248) /248*100 = 454.43%. There are only one operation Argentina which shows more than average % increase in net income before taxes & charges from 1998-1999 (838-94) /94*100=791.48%.Hence (2).
41.	Profitability of North Sea in 1998=21/51=.41. Profitability of North Sea In 1999 = 55/64=.85. Hence (2).
42.	Spain shows the best Profitability in 2000 as income after tax and charges is greater than expenditure. For all other countries expenditure is greater than income after tax & charges . Hence (2).
43.	Rest of world operation in Rest of the world is least efficient . All other values are more than 1. Hence (4).
44.	In year 1998, The operation has least efficiency as its value is significantly less than one, followed by Rest of Latin America. Hence,(4).
45.	Least cost of sending one unit from factory to any district is zero, this is done through BC-AC-AAC. Hence (2).
46.	Least cost of sending one unit from any factory to the district AAB is 95.2 which is possible through AAB-AE-BD. Hence (3).
47.	Least cost of sending one unit from factory BB to any district is a 311.1 which is possible through BB-AB-AAG. Hence (2).
48.	Least cost of sending one unit from factory BB to city AAA is 451.1+314.5=765.6 which is possible through BB-AC-AAA. Hence (1).
49.	Number of possible ways of sending one unit from any city is 6*7*9=378.Hence,(4).
50.	The largest cost of sending 1 unit from any factory to any city is 1035.3 + 1157.7 = 2193.0 which is possible through BF-AE-AAH. Hence (2).
51.	Putting $n = 1$, we get $7^6 - 6^6$ which can be written as $(7^3)^2 - (6^3)^2 \Rightarrow (7^3 + 6^3)(7^3 - 6^3) \Rightarrow 559 \times 127$. Also $7^6 - 6^6$ is divisible by 13. So it is divisible by 13, 127 and 559. So answer is 4th option.
52.	The white square can be chosen in 64/2 = 32 ways. The black square can be chosen in 32 – 8 = 24. So total number of ways = 32 × 24 = 768.
53.	This relationship is satisfied for $u = 3$, $v = 4$, $w = 5$ & $m = 2$. So m is less than min of u, v and w.
54.	Now AB = 25. Now ½ × 15 × 20 = ½ × 25 × CD ⇒ CD = 12. So AD = 9 and BD = 16. So inradius of ΔACD = (½ × 9 × 12) / 18 = 3. Also inradius of Δ CDB = (½ × 16 × 12) / 24 = 4. So horizontal distance PQ = 3 + 4 = 7. Vertical distance is 4-3= 1. PQ = $\sqrt{(7^2+1^2)} = \sqrt{50}$. Hence answer is 2nd option.
55.	Each eats (5 + 3)/3 = 8/3 loaves. Ratio of money that they should share is (5 - 8/3) : (3 - 8/3) = 7/3 : 1/3 or 7:1. So first should receive 7.
56.	Let the middle string be x. So $x + 3x + 3x - 23 = 40$. Solving we get $x = 9$. And shortest string is 27 – 23 = 4.
57.	Let the speed of cat = 1 kmph and let the total distance = 8 km. So cat is at 3 km from entrance and 5 km from exit. In the first case, when the train and the cat are meeting at the entrance, we say that cat is covering 3 kms in 3 hrs. In the 2nd case, cat is covering 5 kms in 5 hrs as it catches the train at the exit which further means that the train has covered (3 + 5) i.e 8 kms in (5 – 3) i.e 2 hrs. So speed of train is 4 kmph. Hence the ratio of their speeds is 4 : 1. So answer is 2nd option.
58.	The original arrangement is S -D -A- R- P- Y- S. Now make the substitutions and get the answer.
59.	Total of 60 manhours are required. At 5 pm, 6 × 6 = 36 manhours have already been put in. Balance = 60 -36 = 24. In 3 hours, 7 + 8 + 9 = 24 more manhours would have been added. So the work gets over at 8 pm.
60.	If KL = 1, then IG = 1 and FI = 2 Hence, tan θ= 2/1 = 2 Thus, θ is none of 30, 45 and 60°.
61.	Area of ABCD = ½ $(2x + 4x)4x = 12x^2$. Area of DEFG = ½$(5x + 2x)2x = 7x^2$. So the ratio of the areas is 12 : 7.
62.	M = ½ (60- M). So M = 20. Similarly we get Z = 15 and L = 12. So M + Z + L = 47. And J = 60 – 47 = 13.
63.	From options, check with 36. To first guard he gives 18 + 2 = 20 and balance = 16. To the second he gives 8 + 2 = 10 and is left with 6. Finally he gives 5 to the last and is left with 1.
64.	Area covered in the first round is 10+19+39+18 = 116. In subsequent round the area covered decreases by 8. In three rounds 116+108+100 = 324 area has been covered. Balance for covering half is 400-324 = 76. So it will take 76/92 = 0.8 rounds more approx
65.	We know that $(x + y + z)^2 = x^2 + y^2 + z^2 + 2xy + 2yz + 2zx$. So $25 = x^2 + y^2 + z^2 + 6$. So $x^2 + y^2 + z^2 = 19$. If $y = z = 0$, then $x^2 = 19$ or $x = \sqrt{19}$. For all other values, $x^2 < 19$. So maximum value for x is $\sqrt{19}$.
66.	X_0 is positive. X_1 & X_2 are negative, X_3 & X_4 are positive, X_5 & X_6 are negative and so on.
67.	Check from options, the sum of 25 and 16 is 41. Difference of 54 and 41 is 13
68.	The distance of the first gutter from A is 2.5 km (also that of gutter 3 from B). Using this we can find distance between gutters 1 and 3 as 20 - (2.5 + 2.5) = 15 km. Now time taken to reach gutter 1 is 5 min. To travel the balance 15 + 17.5 = 32.5 km, it will take 32.5 minutes. It will take 1 min for loading. So total time is 5 + 32.5 + 1 = 38.5. So 1.5 minutes is balance.
69.	Now ½ BE × AB = 7. Area (ABCD) = AB × BC. Now BC = 4 BE. So AB × BC = 4 × BE × AB = 56
70.	Total distance travelled is (100 + 98) + (98 + 96) + (96 + 94) + (94 + 92) + 92 = 860 m.
71.	Area of square is 14 ×14 = 196sq.m. Area of 4 quadrants at the edges = 1 circle of radius 7 = 22/7 × 49 = 154. Ungrazed area is 196 – 154 – 20 = 22 sq.m.
72.	Substitute for each of the options - it fits for option 2.
73.	We will get a right triangle joining the centres and half the common chord. The altitude is the common

	chord = 15 × 20/25 = 12. So total length of common chord will be 12 × 2 = 24.
74.	The bisector needs to have a value which lies between the lengths of its corresponding sides, which are 3 & 4. Thus the length of AD has to lie between 3 & 4. Options 2 and 4 are less than 3 and so cannot be the answers. Option 3 is more than 4. Thus 1st option is the answer.
75.	We can have 8 + 7 +……1 = 36 ways in which n_1 is the first of the triplet. 28 ways with n_2, 21 with n_3, 15 with n_4, 10 with n_5, 6 with n_6, 3 with n_7 and 1 with n_8. Total these values and we get 120.
76.	Let big pump have capacity 3x lpm. (Big pump alone will take time proportional to 1/3x). Small pump will have capacity 2x. All together have capacity = 3 × 2x + 3x = 9x. Time taken will be proportional to 1/9x. So ratio of times will be 1:3.
77.	Revenue for 240 is 1.8 × 240 = 432. For 300 it is 1.5 × 300 =450. For 400 it is 1 × 400 =400. So max is at 300.
78.	Number of 2s – Number of 4s = Number of oranges = 6 - 4 = 2.
79.	Similarly 19 – 4 × 2 = 11.
80.	Line joining (a, a) & (a + 2, a) is parallel to x-axis . This distance between the two points (a, a) & (a + 2,a) is 2. The distance of point (a + 1, a + 1) from base (x-axis) is 1. So area of the triangle is ½ × 1 × 2 = 1.
81.	checking with standard triangle 3,4,5. While travelling through sides one travels 3+4=7 and the diagonal is 5, so saving is half of longer side 4. Hence option (4).
82.	Let the normal speed of the train S be x km / hr. ∴the normal speed of train N is 4x km / hr. Let the train N leave station A at 1 pm. It is late – so it leaves at 1.20 pm By doubling its speed, it reaches B in time. When train N doubles its speed its new speed is 8x km / hr. So the distance AB in terms of x can be calculated as below: D / 4x is initial time D / 8x is time taken when it starts late. The difference between the two is 20 minutes = 1 / 3 hours Equating we get D/4x – 1 / 3 = D/8x. So D = 8x / 3 Meeting point of the trains – is important – since there is only a single line. To travel a distance of 8x / 3, the slow train requires to start (8x / 3) / x hours before 1 pm. So it should start at 8 / 3 hours before 1 pm – Or at 11.20 am. At 1 pm, it will have covered 5x/3 km. So the distance it will require to cover to reach A will be 8x/3 – 5x/3 = x. The relative speed at which the two trains move each other normally is 4x + x = 5x So they will meet at a time = x / 5x = 1/5 hours after 1 pm. Or at 1.12 pm At this time train S is 4x/5 km from A. Now the train S is delayed and starts at 1.20 pm. Travelling at a speed of 8x, it will take 4x / 5 / 8x = 1 / 10 hours to reach the meeting point. So it will reach the meeting point at 1.20 + 6 = 1.26 pm. The slow train has been waiting at the meeting point for the fast train to pass. It starts at 1.26 pm, but it has to cover the balance distance of 4x / 5 km in 2.00 – 1.26 = 34 minutes. So its new speed will be (4x/5)/(34/60) km/h. Ratio of its speed to superfast speed will be (4x / 5) / (34 /60) : 8x or (4x * 60) / (5 * 34 * 8) : 1 = 1 : 17 / 3 = approximately = 1 : 6.
83.	Let the unequal parts be x and y out of which $x > y$. So total number of coins = x + y. Now, as per the question, 48(x - y) = $x^2 - y^2 \Rightarrow x + y = 48$. So answer is 4th option.
84.	Let the number of days he stayed there be x. The number of days he go for yoga be c. The number of days he played tennis be d. So $c + d$ = 22-------(1), ($x - c$) = 24--------(2) & ($x - d$)=14--------(3) adding (2) & (3) we get 2 × x - (c + d) = 38. 2 × x – 22 = 38 ⇒ 2 × x = 60, so x = 30. Hence (3).
85.	(10b + a) - (10a + b) = 1.8 × 10. So $b - a$ =2.Hence (2).
86.	Sushil either paid as per km tariff or as per hour tariff. If he had paid as per km tariff, the per km charge should be 350/30 = Rs11.66 per km. But the per km tariff is either Rs12 per km or Rs7.50 per km. Hence he must have paid as per hour tariff. Upto 5 hrs., rent would be 5 × 60 = Rs.300. For rent more than 300,number of hours=350/50 = 7hrs. So he rented the car for 6 hrs. Hence (4).
87.	We need to find the sum of the natural numbers which is just greater than575. By hit & trial method, we find that sum of 1st 34 natural numbers is 34 × 35/2 = 595. He found the sum as 575. So he must have missed 595 – 575 =20. Hence (4).
88.	If x & y are integers, then R(x, y) =L(x, y). Taking x=1 & y=1 L(x,y) = R(x,y) = 4 .So option 1 is possible. Suppose x =1.6 & y =2.5 ,then L(x, y) = 1+ 2 + 4 =7. R(x, y) = 3 + 5 = 8. Again L(x, y) < R(x, y). We find that there are no real values of x, y for which L(x,y) > R(x,y) Hence (2).
89.	Two intersecting lines gives 4 such regions. 3 lines gives 4+3=7 regions.4 such lines gives,7 + 4 = 11 regions & so on. We find that for n lines, number of regions = (n)(n+1)/2 + 1. So 10 lines will give 10 × 11/2 + 1=56 regions. Hence (1).
90.	2^4=16. So remainder when 2^4 is divided by 17 is 16. So $(2^4)^2$ when divided by 17 leaves remainder as 1. So 2^{256} also leaves remainder as 1.
91.	If both A & B are not zero, then a quadratic equation results & we get 2 roots. For example, if A = B = 1, $1/x + 1/(x - 1) = 1 \Rightarrow 2x - 1 = x^2 - x \Rightarrow x^2 - 3x + 1 = 0$ $\Rightarrow x = 3 \pm \text{sqrt}(5/2)$. if any one of A & B is zero, we get only one root of x. Hence (4).
92.	Since the three words appeared for 5/2,17/4,41/8 seconds, each word stay for next 1 seconds. The time after which a person can completely see all the letters is equal to the L.C.M. of (5/2 +1), (17/4 + 1), (41/8 + 1); i.e. L.C.M. of 7/2, 21/4, 49/8 = L.C.M. of 7, 21, 49/H.C.F. of 2, 4, 8 = 147/2 = 73.5 seconds. Hence (2).
93.	We need to find H.C.F. of 4.5, 6.75, 7.2. Now 450 = $3^2 \times 5^2 \times 2$, 675 = $3^3 \times 5^2$, 720 = $2^4 \times 3^2 \times 5$. H.C.F. = $3^2 \times 5$ = 45. Hence the parts will be of size 0.45m. Hence number of guests is 10 + 15 + 16 i.e. 41. Hence (4)
94.	This problem is best solved by checking options. In option (4), 84 + 53 = 137.This when divided by 3, 4 & 7 leaves respectively 2, 1&4 as remainder. No other option satisfies this. Hence (4).

95.	There are 11 symmetric letters. Number of 4 letters words with all prime letters is 11P4 = 11 × 10× 9 × 8 = 7920. Hence (1).
96.	26P3 is the number of ways in which any 3 letters can be arranged without repetition. (26 – 11)P3 is the number of ways in which any 3 asymmetric letters can be arranged. Hence the number of ways in which the letters can be arranged with at least one symmetric letter is 26P3 - (26 – 11)P3 = 12870. Hence (3).
97.	This can be best solved by substitution method. Try different combinations. For example put $p = 1; q = r = -1$, We get the value of the expression as equal to 1. Only option (3) satisfies this. Hence (3).
98.	We can make upto 6 digit numbers, using digits 0, 7, 8. So total number of six digit number so formed is 3^5 . But one of these numbers is zero which is not possible. 3^5 -1. Hence option (3).
99.	$S = 2 + 5x + 9x^2 + 14x^3 + ...$ $xS = 2x + 5x^2 + ...$ $S(1- x) = 2 + 3x + 4x^2 + 5x^3 + ...$ Let $S_1 = S(1- x) \Rightarrow S_1 = 2 + 3x + 4x^2 + ...$ $xS = 2x + 3x^2 + ...$ $S_1 (1- x) = 2+ x+ x^2 + ...$ But $x+x^2+x^3+.... = x/(1-x)$ So, $S_1(1 – x) = 2 + x/(1 – x)$ $S (1 – x)^2 = 2 + x/(1 – x)$ $\Rightarrow S = 2 – x/(1-x)^3$
100.	This can be done by checking options. Since (A) relates only two of the three variables, this alone can't be true. Taking (B) & (C), we get $x = 4x$, so $x = z = 0$. This is not true. Taking (A) & (B), $x = 2 \times y$ & $z = y$. So L.H.S. $= 4 \times y \times 2 + 5 \times y \times 2 + y \times 2 = 10y \times 2$. And R.H.S.$= 2y (4y + y) = 10y \times 2 =$ L.H.S. Hence (3).
101.	Note that size matches with cricket pitch and vessel matches with measuring oil.
102.	A matches with E, B with G, and so on.
103.	Note that capture matches with Husain capturing the spirit, grasp matches with I could not catch you, and soon.
104.	A matches with H, B with G, and so on.
105.	A matches with G, B matches F, and so on.
106.	D matches with A and E matches with C.
107.	The logical choice is A-C-E and note that F must follow C, which talks of unique value.
108.	The matching sentences are B-E-A, and then C should follow D
109.	C "between the two" must come after Centre and states in E, and B is linked to D, with A as conclusion.
110.	B introduces the subject, while E supports it, followed by D-C-A.
111.	The best option is "obviously" as it matches the sentence.
112.	The best word to match is quantitatively as it goes with the sens of the sentence.
113.	The sentence talks of alternatives, hence (4)
114.	Note that 'firing' goes with using the sun
115.	Arguments are resolved, hence (1)
116.	The sentence is best completed if we say allowed such a process to take place.
117.	C uses the sentence correctly and sums up the main idea.
118.	The subjects as to what happens, should come together, which happens in B.
119.	"create a difference" is the correct usage.
120.	If risk goes down, gambling will be encouraged.
121.	Opprobrium – harsh criticism
122.	Portend – bode
123.	Prevaricate – speak evasively
124.	Restive – restless
125.	Ostensible – apparent
126.	The Indian historians started writing history from there perspective rather than that of British officials.
127.	Evident from the line – break new ground means starting something new and deepen a furrow means establish a perspective.
128.	"But when the raj was settled down, glamour departed from politics, and they turned to the less glorious…"
129.	Can be inferred from the last few lines.
130.	Orme is given in the first paragraph, Dodwell in the second and Dutt in the third.
131.	"men have "given" women the right to contraceptive use and abortion access when their countries were perceived to have an overpopulation problem" – from this line we can infer that the author is referring to India and China as both have an over population problem.
132.	The matriarchal approach is mentioned in a different context.
133.	"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" – hence a pro-life person will never advocate abortion.
134.	Can be inferred from the second last paragraph.
135.	"These tragedies …led a number of stales to pass abortion permitting legislation." Hence we infer that the abortion laws were changed.
136.	The support came from Middle and Upper class Protestants.
137.	Refer to the third paragraph – "…'No Man's Land' is philosophy" hence it is an area where things are not certain.
138.	Philosophy is "is something intermediate between theology and science" hence it is complimentary
139.	As the passage is a discussion about philosophy, the author is probably a philosopher.
140.	The author does not discuss the nature of the universe. He only asks some questions.
141.	First paragraph – "may also be helpful for treating diseases…"
142.	Note that trams and vehicular traffic are used to explain cell biology.
143.	The first three statements can be derived from the passage, but not the last two.
144.	(a) and (c) can be directly inferred.
145.	Only (a) and (b) are derived from the passage, (c) our muscles would not move without proteins and the Ronald is stated to be in University of California.
146.	Can be derived from the first and third paragraphs.
147.	Read the line, "The paying of attention to one's audience is called "rhetoric" – in the first three choices this is applicable, not in the last. The answer can also be inferred from the meaning of rhetoric as explained in the passage.

148.	Economists use unfamiliar terms, hence we can infer (3).
149.	Arcane – something mysterious.

150.	It is clear that rhetoric is used to persuade people (the example of elections etc make this clear).