

Question Booklet Serial No.

ADMISSION TEST FOR PROGRAMME 2010-12

Time: 2 Hours

Marks: 100

ROLL NUMBER

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NAME (in Capital Letters)

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**INSTRUCTIONS**

- Write the **Question Booklet Serial Number** in the space provided in the **Answer Sheet**. **Question Booklet Serial Number** is given at the top of this page.
- Write your **Roll No.** clearly in the space provided in both the **Question Booklet** and the **Answer Sheet**.
- Mark your answers in the **Answer Sheet** only. The **Answer Sheet alone** will constitute the basis of evaluation.
- All **rough work** must be done in the **Question Booklet** only.
- Do not make any stray marks anywhere in the answer sheet.
- Do not fold or wrinkle the answer sheet.
- Use only **HB Pencil** to **mark the answers** in the answer sheet.
- All questions have one correct answer. Every answer must be indicated clearly darkening one circle for each answer. If you wish to change an answer, erase completely the already darkened circle, then make a fresh mark. If you darken more than one circle your answer will be treated as wrong, as shown in the example below:**



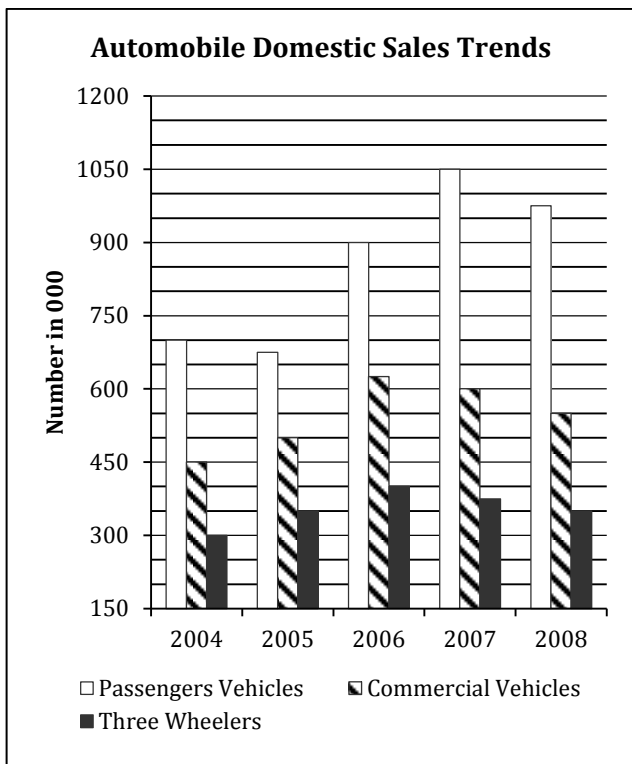
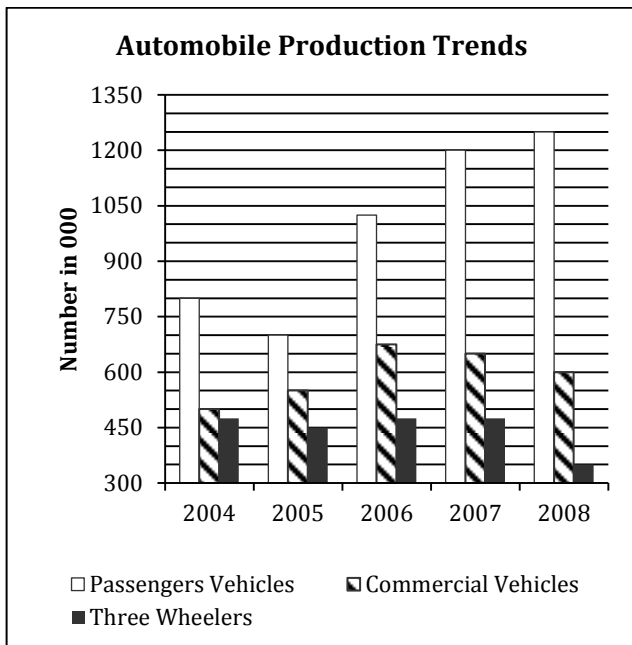
- Candidates are advised to spend time judiciously on different sections as there are **sectional cut-off marks**.
- There is **negative marking equivalent to 1/3<sup>rd</sup> of the mark** allotted to the specific question for wrong answer.
- The candidates are advised to **read all options thoroughly**.
- No clarification of any sort regarding the question paper is permitted.

**THE ENTIRE QUESTION PAPER IS DIVIDED INTO  
THE FOLLOWING SECTIONS**

SECTIONS	PART	NO. OF QUESTIONS	MARKS PER QUESTION	TOTAL MARKS
(a)	(b)	(c)	(d)	(e) = (c) × (d)
Section - 1		34 (Questions 1 - 34)	1.0	<b>34.00</b>
Section - 2		20 (Questions 35 - 54)	0.4	<b>08.00</b>
Section - 3		28 (Questions 55 - 82)	1.0	<b>28.00</b>
Section - 4	Part-1	15 (Questions 83 - 97)	1.0	<b>15.00</b>
	Part-2	25 (Questions 98 - 122)	0.6	<b>15.00</b>
<b>Total</b>		<b>122</b>		<b>100.00</b>

### Section I

Instructions for questions 1 – 6: Answer the questions based on the following graphs



- Which of the following year exhibited highest percentage decrease over the preceding year in the automobile production?  
 (1) 2005 (2) 2006  
 (3) 2007 (4) 2008
- Assume whatever that is not sold domestically was exported, then which year has registered highest growth in exports of automobiles?  
 (1) 2005 (2) 2006  
 (3) 2007 (4) 2008
- If the ratio of the domestic sale price of a commercial vehicle, a passenger vehicle, and a three wheeler is 5 : 3 : 2 then what percent of earnings (approximately) is contributed by commercial vehicle segment to the overall earnings from domestic sales during the period 2004-2008?  
 (1) 45% (2) 43%  
 (3) 11% (4) 27%
- For which year were the domestic sales of automobiles closest to the average (2004-2008) domestic sales of automobiles?  
 (1) 2005 (2) 2006  
 (3) 2007 (4) 2008
- Which of the following years exhibited highest percentage increase over the preceding year in the automobile sales?  
 (1) 2005 (2) 2006  
 (3) 2007 (4) 2008
- The ratio between absolute increase in domestic sales over preceding year and absolute increase in production over the preceding year is highest during which year?  
 (1) 2005 (2) 2006  
 (3) 2007 (4) 2008

Instructions for questions 7 – 9: Answer the questions based on the following information.

The table below gives the details of money allocation by three Mutual funds namely, Alpha, Beta, and Gama. The return for each fund depends on the money they allocate to different sectors and the returns generated by the sectors. The last column of the table gives return for each of the sectors for a one year period.

Sl. No	Sectors	Money Allocation			Sectoral Return
		Alpha	Beta	Gama	
1	Automobile	1.49	5.98	0.00	5%
2	Chemicals	3.01	2.01	5.00	12%
3	Communication	7.01	5.00	4.00	-5%
4	Construction	1.51	0.00	6.01	15%
5	Diversified	7.48	6.99	9.50	11%
6	Energy	9.99	17.50	20.50	21%
7	Engineering	9.01	10.99	15.50	8%
8	Financial	25.98	24.00	17.01	6%
9	FMCG	14.50	2.00	2.00	25%
10	Health Care	5.98	0.00	3.00	18%
11	Metals	0.00	10.99	9.98	-8%
12	Services	4.50	7.04	4.00	10%
13	Technology	5.51	7.50	3.50	-2%
14	Textiles	4.03	0.00	0.00	17%
		<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	

7. Which fund has received more return per rupee of investment for one year period?

- (1) Alpha    (2) Beta  
(3) Gama    (4) Both Beta and Gama gives same return

8. If the allocation of money by the fund managers to different sectors is based on the internal ranking (i.e. Sector with 1<sup>st</sup> rank gets highest allocation). Sectors with 0 allocation of money should be considered as 14<sup>th</sup> rank irrespective of the number of sectors in that category. In the light of these examine the following statements:

- I. Automobile is ranked by both Alpha and Beta as same  
II. Financial is most favoured by all three Mutual Funds  
III. Services is ranked by all three Mutual Funds within top 9 ranks

Select the best option:

- (1) Statement I and II are correct  
(2) Statement I and III are correct  
(3) Statement I alone is correct  
(4) Statement III alone is correct

9. Ms. Hema invested Rs. 10.00 lakhs in fund Gama in the beginning of the period. What will be the value of the investment at the end of 1 year period?

- (1) Approximately Rs. 10.40 lakhs  
(2) Approximately Rs. 10.95 lakhs  
(3) Approximately Rs. 11.24 lakhs  
(4) Approximately Rs. 11.38 lakhs

**Instructions for questions 10 – 14:**

Answer the questions based on the following Table

Crops	Area under production			Quantity of Production		
	('000 Hectare)			('000 Tonne)		
	2006	2007	2008	2006	2007	2008
<b>Cereals</b>						
Rice	107	108	110	153	170	190
Jowar	598	673	720	173	368	380
Bajra	4992	4890	4800	2172	3421	3350
Maize	1004	1020	1101	1102	1116	1182
Millets	16	16	15	5	4	4
<b>Pulses</b>						
Moong	799	751	725	130	270	260
Urd	124	101	102	31	30	35
Moth	1228	1151	1199	149	191	250
Arhar(Tur)	20	19	19	13	9	9
Chaula	126	110	101	26	45	30
Other Pulses	5	5	5	2	3	2
<b>Oil Seeds</b>						
Sesamum	422	273	280	63	89	70
Groundnut	317	302	298	491	396	374
Soyabean	744	641	650	856	771	799
Sunflower	472	350	325	880	751	699
Castor Seed	106	79	80	135	104	106
<b>Note:</b> Yield (or Productivity) is defined as quantity produced per hectare						

10. What is the ratio between Jowar yield (2007) and Soyabean yield (2008)?

- (1) 1.00 : 2.10    (2) 1.21 : 1.89  
 (3) 0.89 : 2.00    (4) 0.78 : 1.61

11. Top 3 crops by yield in the year 2006 are:

- (1) Castor Seed, Groundnut, Maize                  (2) Sunflower, Groundnut, Rice  
 (3) Castor Seed, Sunflower, Rice                  (4) Bajra, Maize, Castor Seed

12. Bottom 3 crops by yield in the year 2008 are:

- (1) Moth, Sesamum, Millets                          (2) Moong, Moth, Millets  
 (3) Arhar, Urd, Moong                                  (4) Moong, Sesamum, Chaula

13. Examine the following statements:

- I. Total productivity of pulses has gone down over the years  
 II. Maize is the most stable cereal in terms of productivity over the years  
 III. Percentage growth in area and quantity of production is highest in the case of Jowar during the entire period.

Select the best option:

- (1) Statement I and II are correct                  (2) Statement I and III are correct  
 (3) Statement II and III are correct                  (4) Statement III alone is correct

14. Examine the following statements:

- I. Over the period total cereal productivity has gone up  
 II. Area, Production and yield of the total oil seeds is on decline  
 III. Though there is a decline in the area under Urd production but the quantity of production and yield has gone up over the years.

Select the best option:

- (1) Statement I and III are correct                  (2) Statement I and II are correct  
 (3) Statement I alone is correct                      (4) Statement III alone is correct

**Instructions for questions 15 – 19:**

Study the following carefully and answer the questions.

Oil Sales by Type of Use and Production Loss (MT)					
Year	Oil Used				Oil Production Loss
	Metro City			Suburban	
	House Hold	Transport	Industrial		
1996	10	700	1794	104	650
1997	16	920	1864	114	732
1998	22	1012	1732	104	834
1999	22	1054	1668	90	1102
2000	20	1092	1700	108	702
2001	22	1320	1752	168	492
2002	14	1854	1618	172	386
2003	6	2046	1270	178	444
2004	16	2118	1480	208	506
2005	4	2252	1132	230	1032
2006	4	2384	1228	210	1142
2007	8	2096	1672	254	1454
2008	0.2	2240	1646	266	1428

**Note:** Whatever is produced in a year is either used or lost in the production in the same year.

15. During which year the Oil used for House Hold as a percentage of Total Oil Used is highest?  
 (1) 1998 (2) 1999 (3) 2000 (4) 2001
16. During which year the 'Oil Production Loss' as a proportion of 'Total Oil Produced' is the lowest?  
 (1) 2002 (2) 2003 (3) 2004 (4) 2006
17. During which year use of oil by 'Suburban' as a proportion of 'Total Oil Used' was the highest?  
 (1) 2005 (2) 2006 (3) 2007 (4) 2008
18. For how many number of years the growth rate in 'Production of Oil' is more than the growth rate in 'Total Oil Used'?  
 (1) 3 years (2) 4 years (3) 5 years (4) 8 years
19. Which of the below statements are true, based on the data in the above table?  
 (1) Oil is used for 'Transport' purpose by Metro City is increasing every since 1996.  
 (2) Oil is used for 'Industrial' purpose by Metro City is increasing every since 1996.  
 (3) Oil used by 'Suburban' is increasing every year since 2000.  
 (4) Total Oil Produced' is increasing every year since 2003.

**Instructions for questions 20 – 22: Study the following information carefully and answer the questions.**

Four houses Blue, Green, Red and Yellow are located in a row in the given order. Each of the houses is occupied by a person earning a fixed amount of a salary. The four persons are Paul, Krishna, Laxman, and Som.

Read the following instruction carefully:

- I. Paul lives between Som and Krishna
- II. Laxman does not stay in Blue house
- III. The person living in Red house earns more than that of person living in Blue
- IV. Salary of Som is more than that of Paul but lesser than that of Krishna
- V. One of the person earns Rs. 80,000
- VI. The person earning Rs. 110,000 is not Laxman

- VII. The salary difference between Laxman and Son is Rs. 30,000 (1) 185 (2) 37  
(3) 175 (4) 27
- VIII. The House in which Krishna lives is located between houses with persons earning salaries of Rs. 30,000 and Rs. 50,000
- IX. Krishna does not live in Yellow house, and the person living in yellow house is not earning lowest salary among the four persons.
20. Who lives in Red house?  
(1) Paul (2) Krishna  
(3) Laxman (4) Som
21. Which house is occupied by person earning highest salary?  
(1) Blue (2) Green  
(3) Red (4) Yellow
22. What is the salary earned by person living in Green house?  
(1) Rs. 30,000 (2) Rs. 50,000  
(3) Rs. 80,000 (4) Rs.110,000
23. Mr Raghav went in his car to meet his friends John. He Drove 30 kms towards north and then 40 kms towards west. He then turned to south and covered 8 kms. Further he turned to east and moved 26 kms. Finally he turned right and drove 10 kms and then turned left to travel 19 kms. How far and in which direction is he from the starting point?  
(1) East of starting point, 5 kms  
(2) East of starting point, 13 kms  
(3) North East of starting point, 13 kms  
(4) North East of starting point, 5 kms
24. Mr. Raju took the members of his family for a picnic. His father's mother and mother's father including their two children were in one car. His father's son and sister's husband, brother's wife were in second car. He along with his wife, wife's sister, wife's brother and son's wife with a kid was in the third car. How many members of Mr. Raju's family were there in the picnic along with Mr. Raju and how many were left behind (assuming all members of the third generation are married)?  
(1) 13 and 4 (2) 14 and 5  
(3) 12 and 5 (4) 13 and 6
25. ABCDE play a game of cards. 'A' tells 'B' that if 'B' gives him five cards 'A' will have as many cards as 'E' has. However if A gives five cards to 'B' then 'B' will have as many cards as 'D'. A and B together has 20 cards more than what D and E have together. B has four cards more than what C has and total number of cards are 201. How many cards B have?
26. Ganesh Cultural Centre for promoting arts has appointed 3 instructors for music, dance, and painting. Music instructor takes session from 12 noon to 4:00 pm on Monday, Thursday and Sunday. The sessions of dance instructor are scheduled on Tuesday, Thursday, Wednesday and Sunday between 10:00 am to 2:00 pm. The 9:00 am to 12:00 noon slot on Tuesday, Friday and Thursday and also 2:00 pm to 4:00 pm slot on Wednesday, Saturday and Sunday is filled up by Painting Instructor. On which day(s) of a week the dance and painting sessions are simultaneously held?  
(1) Sunday and Wednesday (2) Tuesday and Friday  
(3) Tuesday and Thursday (4) Only on Tuesday

**Instructions for questions 27 – 30: Study the information given below and answer the questions.**

The following table contains the pre and post revision pay structure of a Government department:

Components	Pre-revised			Revised		
	Minimum	Maximum	Annual Increment	Minimum	Maximum	Grade Pay
Pay Scale	Rs. 8,000	Rs. 13,500	Rs. 275	Rs. 15,600	Rs. 39,100	Rs. 5,400
	Rs. 12,000	Rs. 16,500	Rs. 375	Rs. 15,600	Rs. 39,100	Rs. 7,600
	Rs. 16,400	Rs. 20,000	Rs. 450	Rs. 37,400	Rs. 67,000	Rs. 8,900
	Rs. 18,400	Rs. 22,400	Rs. 500	Rs. 37,400	Rs. 67,000	Rs. 10,000
Dearness Allowance (DA)	78%			28%		
House Rent Allowance(HRA)	30% of Basic pay			30% of Basic pay		
Transport Allowance(TA)	Rs. 800			Rs. 3,200+Rs. 3,200*DA		

The revision has been done based on the following terms:

- In pre-revised pay scale, the basic pay is the sum of the minimum pay in the appropriate pay scale and the admissible increment. After revision, the basic pay is the sum of minimum pay in the appropriate pay scale and the respective grade pay and the admissible increments.
- Annual increment of 3% of the basic pay (on a compounded basis) is paid under the revised pay rules.
- Monthly Dearness Allowance (DA) is calculated as percentage of basic pay.
- In pre-revised pay scales, the increment was given after the completion of each year of service, but, after revision annual increments are given only in the month of July every year and there should be a gap of six months between the increments. The employees who had joined the department in the month of September, October, November and December are given an increment at the time of revised pay fixation in September, 2008.

The revised pay is applicable from 1<sup>st</sup> September, 2008.

27. Abhijit joins the department on November 10, 2006 in the pay scale of Rs. 18,400-500-22,400 with the pay of Rs. 18,400 plus 2 increments. What is his basic salary, after revision, on August 1, 2009?
- (1) Rs. 53,010                      (2) Rs. 53,349                      (3) Rs. 54,950                      (4) Rs. 54,903
28. Nitin joined the department on November 24, 2004 in the pay scale of Rs. 8,000-275-13,500, at the minimum pay. At the time of pay revision, due to some error, his pay was fixed at the base (minimum) of the corresponding revised pay scale. The loss in his total emoluments for September 2008, due to this error, will be:
- (1) Rs. 3,915                      (2) Rs. 3,982                      (3) Rs. 4,164                      (4) No loss.
29. Sunitha joined the department at the basic pay of Rs. 13,500 in the pay scale of Rs. 12,000-16,500. On completion of her four years of service in December, 2008, she was promoted to the next higher pay scale, the percentage increase in her gross salary is:
- (1) 53%                      (2) 43%                      (3) 50%                      (4) 60%
30. Dinesh joined on July 1, 2008 in the pay scale of Rs. 16,400-20,000 at the basic pay of Rs. 16,850. On August 10, 2009, the department revised the rates of DA to 31% with effect from January, 2009 and further to 36% effective from July 2009. How much arrear will Dinesh get in August, 2009 because of these revisions?
- (1) Rs. 12,981                      (2) Rs. 10,395                      (3) Rs. 17,052                      (4) Rs. 13,302

**Instructions for questions 31 – 33:**

Study the information given below and answer the questions.

A word arrangement machine, when given a particular input, rearranges it using a particular rule. The following is the illustration and the steps of the arrangement

**INPUT:** Smile Nile Style Mile Shine Wine Mine Swine Bovine Feline

**STEP 1:** Smile Nile Style Mile Shine Wine Bovine Feline Mine Swine

**STEP 2:** Style Mile Smile Nile Shine Wine Bovine Feline Mine Swine

**STEP 3:** Style Mile Smile Nile Wine Shine Bovine Feline Mine Swine

**STEP 4:** Mile Style Nile Smile Wine Shine Feline Bovine Swine Mine

**STEP 5:** Nile Smile Mile Style Wine Shine Swine Mine Feline Bovine

**STEP 6:** Nile Smile Mile Style Wine Shine Feline Bovine Swine Mine

**STEP 7:** Mile Style Nile Smile Wine Shine Feline Bovine Swine Mine

31. Which of the following will be step 14 for the given input:

- (1) Style Mile Smile Nile Wine Shine Bovine Feline Mine Swine  
 (2) Smile Nile Style Mile Shine Wine Mine Swine Bovine Feline  
 (3) Mile Style Nile Smile Shine Wine Feline Bovine Swine Mine  
 (4) Style Mile Smile Nile Shine Wine Bovine Feline Mine Swine

32. Mark the arrangement that does not fall between step numbers 12 and 14.

- (1) Style Mile Smile Nile Wine Shine Bovine Feline Mine Swine  
 (2) Mile Style Nile Smile Wine Shine Feline Bovine Swine Mine  
 (3) Style Mile Smile Nile Shine Wine Bovine Feline Mine Swine  
 (4) Smile Nile Style Mile Shine Wine Bovine Feline Mine Swine

33. If the arrangement is repeated which of the steps given below is same as the INPUT row?

- (1) Step 9 (2) Step 11 (3) Step 20 (4) Step 14

**Instructions for questions 34:**

Study the information given below and answer the questions.

A Prime Minister is contemplating the expansion of his cabinet. There are four ministerial berths and there are eight probable candidates (C1-C8) to choose from. The selection should be in a manner that each selected person shares a liking with at least one of the other three selected members. Also, the selected must also hate at least one of the likings of any of the other three persons selected.

- I. C1 likes travelling and sightseeing, but hates river rafting.  
 II. C2 likes sightseeing and squash, but hates travelling.  
 III. C3 likes river rafting, but hates sightseeing.  
 IV. C4 likes trekking, but hates squash.  
 V. C5 likes squash, but hates sightseeing and trekking.  
 VI. C6 likes travelling, but hates sightseeing and trekking.  
 VII. C7 likes river rafting and trekking, but hates travelling.  
 VIII. C8 likes sightseeing and river rafting, but hates trekking.

34. Who are the four people selected by the Prime Minister?

- (1) C1, C2, C5, C6 (2) C3, C4, C5, C6 (3) C1, C2, C4, C7 (4) None of the above



## Section II

35. Arcelor, acquired by Mittal steel, was formed by merger of which of the following three steel companies?

- (1) Arcel, Arecalia and Usinor
- (2) Arcel, Acer and Lucinor
- (3) Arbed, Aceralia and Usinor
- (4) None of the above

36. Select the correct author - book match.

Author	Book
a. Narayan Murthy	i. Imagining India
b. Nandan Nilekani	ii. Remaking India
c. Ratan Tata	iii. A Better India A Better World
d. A P J Abdul Kalam	iv. A Vision For The New Millennium

- (1) a-iii, b-i, c-ii, d-iv
- (2) a-i, b-iii, c-iv, d-ii
- (3) a-i, b-ii, c-iii, d-iv
- (4) a-ii, b-i, c-iii, d-iv

37. The company Fem Care Pharma Limited, the manufacturer of Fem Bleach, was acquired by?

- (1) Hindustan Unilever Limited
- (2) Godrej Industries Limited
- (3) Dr Reddy's Laboratories
- (4) Dabur India Limited

38. Which is the correct Stock Index - Country Match?

Stock Index	Country
a. HANG SENG	i. United States
b. NASDAQ	ii. South Korea
c. FTSE	iii. Hong Kong
d. KOSPI	iv. United Kingdom

- (1) a-i, b-ii, c-iii, d-iv
- (2) a-iii, b-i, c-iv, d-ii
- (3) a-iv, b-i, c-iii, d-ii
- (4) a-iv, b-ii, c-i, d-iii

39. Which is the correct Legal Act and Jurisdiction Match?

Act	Jurisdiction
a. Companies Act 1956	i. Facilitating external trade and payments
b. Competition Act 2002	ii. Formation and regulation of companies
c. SEBI Act 1992	iii. Prohibition of anti-competitive agreements
d. FEMA Act 1999	iv. Investors' protection

- (1) a-ii, b-iii, c-iv, d-i
- (2) a-iv, b-ii, c-iii, d-i
- (3) a-iv, b-i, c-ii, d-iii
- (4) a-iv, b-ii, c-iii, d-i

40. Match the President, Country and Currency.

President	Country	Currency
a. Nicolas Sarkozy	i. Russia	1. Rouble
b. Dmitry Medvedev	ii. Uganda	2. Euro
c. Yoweri Museveni	iii. Germany	3. Shilling
d. Horst Kohler	iv. France	4. Dollar

- (1) a-i-1, b-ii-2, c-iii-3, d-iv-4
- (2) a-iii-2, b-i-1, c-ii-3, d-iv-4
- (3) a-iv-2, b-i-1, c-ii-3, d-iii-2
- (4) a-ii-2, b-i-1, c-iii-4, d-iv-4

41. The abbreviations given in the first column are explained in the second column. Select the option which has all wrong explanations of the abbreviations.

a. UNCTAD:	i. United Nations Conference on Trade and Development
b. UNCED:	ii. UN Conference on Education and Development
c. TAFTA:	iii. Trans-Atlantic Financial Trade Agreement
d. FEMA:	iv. Foreign Exchange Management Act
e. PFRDA:	v. Pension Fund Reporting and Development Authority
f. NASSCOM:	vi. National Association of Software and Services Companies
g. MODVAT:	vii. Modified Value Added Tax
h. FCNRA:	viii. Foreign Currency Non-Resident Account
i. ASSOCHAM:	ix. Associated Chamber of Commerce Trade and Industry

- (1) b-ii, c-iii, e-v, i-ix
- (2) a-i, f-vi, h-viii
- (3) b-ii, d-iv, g-vii
- (4) e-v, i-ix, h-viii

42. Who amongst the following was not nominated by the Government of India on the board of Satyam Computers Services?

- (1) T N Manoharan
- (2) Ketan Parekh
- (3) Suryakant Balakrishnan Mainak
- (4) Kiran Karnik

43. CDS which has been in news recently stands for?

- (1) Collateral Default Swap
- (2) Credit Demand Swap
- (3) Credit Default Swap
- (4) Collateral Demand Swap

44. The table given below matches the company with its auto brand. Choose the correct match.

Company	Brand
a. Mahindra	i. Land Rover
b. Tata	ii. Jetta
c. Toyota	iii. Lexus
d. Volkswagen	iv. Xylo

- (1) a-i, b-ii, c-iii, d-iv                      (2) a-iv, b-i, c-ii, d-iii  
(3) a-iv, b-i, c-iii, d-ii                      (4) a-iv, b-ii, c-iii, d-iv

45. The slogans in the table given below have been matched with the company they relate to. Choose the correct match.

Slogan	Company
a. Let's make things better	i. HP
b. Technology you can trust	ii. Phillips
c. Sponsors of tomorrow	iii. Microsoft
d. Your potential our passion	iv. Intel

- (1) a-ii, b-i, c-iii, d-iv                      (2) a-iii, b-ii, c-i, d-iv  
(3) a-ii, b-i, c-iv, d-iii                      (4) a-ii, b-iv, c-i, d-iii

46. In the financial year 2008-09, the top three investing countries in terms of FDI inflows were:

- (1) USA, UK, Mauritius                      (2) Mauritius, Singapore, USA  
(3) UK, Japan, Mauritius                      (4) Mauritius, USA, Japan

47. Negative inflation is also called:

- (1) Disinflation                                      (2) Deflation  
(3) Both    (4) None of the above

48. The co-founders of Google are:

- (1) Sergey Brin & Eric Schmidt  
(2) Larry Page & Eric Schmidt  
(3) Sergey Brin & Larry Page  
(4) Shirley M tilghman & Eric Schmidt

49. Which of the following Public Sector Units does not fall in the category of 'Navratna' PSUs:

- (1) Steel authority of India (SAIL)  
(2) Indian oil corporation (IOC)  
(3) National Thermal Power corporation (NTPC)  
(4) National Hydroelectric Power Corporation (NHPC)

50. Which one of the following statements does not relate to the concept of carbon credits?

- (1) For one tonne of carbon dioxide emission reduction a company receives a carbon emission

certificate which can be traded like any other commodity.

- (2) The carbon emission certificates are sold to companies in developed economies like power utilities.  
(3) Carbon credit certificates are traded under UN-mandated international convention on climate change.  
(4) Developing economies are allowed to offset some of their emissions from cars, factories and homes by funding clean energy projects in developed ones.

51. India signed the Kyoto Protocol in the year:

- (1) 20009                      (2) 19989                      (3) 20029                      (4) 1995

52. Match Column A with Column B.

Column A	Column B
a. C K Pralhad	i. Capability & equality
b. Paul Krugman	ii. Climate Change & Global Warming
c. Al Gore	iii. International Trade And Geography
d. Amartya Sen	iv. Core Competence Of The Corporation

- (1) a-i, b-ii, c-iii, d-iv                      (2) a-iv, b-iii, c-ii, d-i  
(3) a-ii, b-iii, c-i, d-iv                      (4) a-iii, b-ii, c-i, d-iv

53. Match the women CEOs with the company.

CEO	Company
a. Ms Shikha Sharma	i. HSBC
b. Ms Naina Lal Kidwai	ii. Axis bank
c. Ms Indra Nooyi	iii. Biocon India
d. Ms Kiran Majumdar Shaw	iv. Pepsico

- (1) a-iii, b-i, c-ii, d-iv                      (2) a-i, b-ii, c-iv, d-iii  
(3) a-ii, b-i, c-iv, d-iii                      (4) a-i, b-iii, c-iv, d-ii

54. Match the company and the place where it originates from

Company	Place of origin
a. Toyota	i. Finland
b. Nokia	ii. Japan
c. Volvo	iii. South Korea
d. LG Electronics	iv. Sweden

- (1) a-ii, b-i, c-iv, d-iii                      (2) a-ii, b-i, c-iii, d-iv  
(3) a-iii, b-ii, c-i, d-iv                      (4) a-iii, b-iv, c-i, d-ii

## Section III

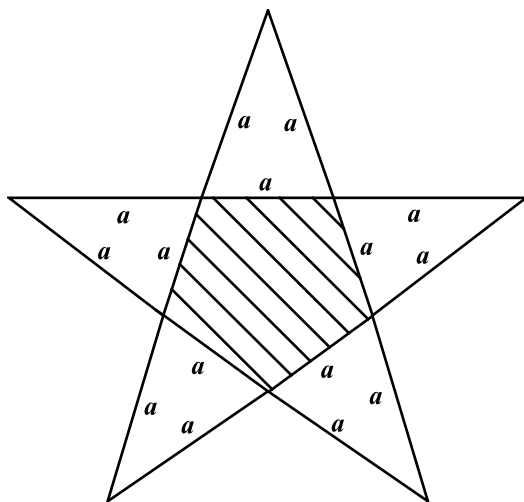
55. Fortuner, the latest SUV by Toyota Motors, consumes diesel at the rate of  $\frac{1}{400} \left\{ \left( \frac{1000}{x} \right) + x \right\}$  litres per km, when driven at the speed of  $x$  km per hour. If the cost of diesel is Rs. 35 per litre and the driver is paid at the rate of Rs. 125 per hour then find the approximate optimal speed (in km per hour) of Fortuner that will minimize the total cost of the round trip of 800 kms.
- (1) 49      (2) 55      (3) 50      (4) 53
56. Two motorists Anil and Sunil are practicing with two different sports cars: Ferrari and Maclarun, on the circular racing track, for the car racing tournament to be held next month. Both Anil and Sunil start from the same point on the circular track. Anil completes one round of the track in 1 minute and Sunil takes 2 minutes to compete a round. While Anil maintains same speed for all the rounds, Sunil halves his speed after the completion of each round. How many times Anil and Sunil will meet between the 6<sup>th</sup> round and 9<sup>th</sup> round of Sunil (6<sup>th</sup> and 9<sup>th</sup> round is excluded)? Assume that the speed of Sunil remains steady throughout each round and changes only after the completion of that round.
- (1) 260      (2) 347  
(3) 382      (4) None of the above
57. The sum of the series is:  
 $\frac{1}{1.2.3} + \frac{1}{3.4.5} + \frac{1}{5.6.7} + \dots$
- (1)  $e^2 - 1$       (2)  $\log_e 2 - 1$   
(3)  $2\log_{10} 2 - 1$       (4) None of the above
58. If  $\log_2 x \cdot \log_{\frac{x}{64}} 2 = \log_{\frac{x}{16}} 2$ . Then  $x$  is:
- (1) 2      (2) 4      (3) 16      (4) 12
59. A right circular cone is enveloping a right circular cylinder such that the base of the cylinder rests on the base of the cone. If the radius and the height of the cone is 4 cm and 10 cm respectively, then the largest possible curved surface area of the cylinder of radius  $r$  is:
- (1)  $20\pi r^2$       (2)  $5\pi r(4 - r)$   
(3)  $5\pi r(r - 4)$       (4)  $5\pi r(2 - r)$
60. Radius of a spherical balloon, of radii 30 cm, increases at the rate of 2 cm per second. Then its curved surface area increases by:
- (1)  $120\pi$       (2)  $480\pi$   
(3)  $600\pi$       (4) None of the above
61. Mohan was playing with a square cardboard of side 2 metres. While playing, he sliced off the corners of the cardboard in such a manner that a figure having all its sides equal was generated. The area of this eight sided figure is:
- (1)  $\frac{4\sqrt{2}}{(\sqrt{2} + 1)}$       (2)  $\frac{4}{(\sqrt{2} + 1)}$   
(3)  $\frac{2\sqrt{2}}{(\sqrt{2} + 1)}$       (4)  $\frac{8}{(\sqrt{2} + 1)}$
62. Because of economic slowdown, a multinational company curtailed some of the allowances of its employees. Rashid, the marketing manager of the company whose monthly salary has been reduced to Rs.42000 is unable to cut down his expenditure. He finds that there is a deficit of Rs.2000 between his earnings and expenses in the first month. This deficit, because of inflationary pressure, will keep on increasing by Rs.500 every month. Rashid has a saving of Rs.60000 which will be used to fill this deficit. After his savings get exhausted, Rashid would start borrowing from his friends. How soon will he start borrowing?
- (1) 10<sup>th</sup> month      (2) 11<sup>th</sup> month  
(3) 12<sup>th</sup> month      (4) 13<sup>th</sup> month
63. The number of distinct terms in the expansion of  $(X + Y + Z + W)^{30}$  are:
- (1) 4060      (2) 5456      (3) 27405      (4) 46376
64. A card is drawn at random from a well shuffled pack of 52 cards.  
 X: The card drawn is black or a king.  
 Y: The card drawn is a club or a heart or a jack.  
 Z: The card drawn is an ace or a diamond or a queen.  
 Then which of the following is correct?
- (1)  $P(X) > P(Y) > P(Z)$       (2)  $P(X) \geq P(Y) = P(Z)$   
(3)  $P(X) = P(Y) > P(Z)$       (4)  $P(X) = P(Y) = P(Z)$
65. Let  $A_1$  be a square whose side is  $a$  metres. Circle  $C_1$  circumscribes the square  $A_1$  such that all its vertices are on  $C_1$ . Another square  $A_2$  circumscribes  $C_1$ . Circle  $C_2$  circumscribes  $A_2$ , and  $A_3$  circumscribes  $C_2$ , and so on. If  $D_N$  is the area between the square  $A_N$  and the circle  $C_N$ , where  $N$  is a natural number, then the ratio of the sum of all  $D_N$  to  $D_1$  is:
- (1) 1      (2)  $\frac{\pi}{2} - 1$   
(3) Infinity      (4) None of the above

66. Mr. Raheja, the president of Alpha Ltd., a construction company, is studying his company's chances of being awarded a Rs. 1,000 crore bridge building contract in Delhi. In this process, two events interest him. First, Alpha's major competitor Gamma Ltd, is trying to import the latest bridge building technology from Europe, which it hopes to get before the deadline of the award of contract. Second, there are rumors that Delhi Government is investigating all recent contractors and Alpha Ltd is one of those contractors, while Gamma Ltd is not one of those. If Gamma is able to import the technology and there is no investigation by the Government, then Alpha's chance of getting contract is 0.67. If there is investigation and Gamma Ltd is unable to import the technology in time, the Alpha's chance is 0.72. If both events occur, then Alpha's chance of getting the contract is 0.58 and if none events occur, its chances are 0.85. Raheja knows that the chance of Gamma Ltd being able to complete the import of technology before the award date is 0.80. How low must the probability of investigation be, so that the probability of the contract being awarded to Alpha Ltd is atleast 0.65? (Assume that occurrence of investigation and Gamma's completion of import in time is independent to each other.)
- (1) 0.44      (2) 0.57      (3) 0.63      (4) 0.55
67. Aditya, Vedus and Yuvraj alone can do a job in 6 weeks, 9 weeks and 12 weeks respectively. They work together for 2 weeks. Then Aditya leaves the job. Vedus leaves the job a week earlier to the completion of the work. The job would be completed in:
- (1) 4 weeks      (2) 5 weeks  
(3) 7 weeks      (4) None of the above
68. In 2006, Raveendra was allotted 650 shares of Sun Systems Ltd in the initial public offer, at the face value of Rs. 10 per share. In 2007, Sun Systems declared the bonus at the rate of 3 : 13. In 2008, the company again declared the bonus at the rate of 2 : 4. In 2009, the company declared a dividend of 12.5%. How much dividend does Raveendra get in 2009 as a percentage of his initial investment?
- (1) 24.5%      (2) 23.9%      (3) 24.1%      (4) 23%
69. Find the distance between them after 30 min from the initial point of reference.
- (1)  $\frac{50}{\sqrt{3}}$  km      (2) 25 km  
(3)  $\frac{25}{\sqrt{3}}$  km      (4)  $25\sqrt{3}$  km
70. If both are moving in same direction and the submarine is ahead of the warship in both the situations, then the speed of the warship, if the ratio of the speed of warship to that of the submarine is 2 : 1, is:
- (1)  $\frac{100}{\sqrt{3}}$  km/hr      (2)  $100\sqrt{3}$  km/hr  
(3)  $200\sqrt{3}$  km/hr      (4)  $\frac{200}{\sqrt{3}}$  km/hr
71. Kartik's mother asked him to get the vegetables, milk and butter from the market and gave him the money in the denomination of 1 Rupee, 2 Rupee and 5 Rupee coins. Kartik first goes to the grocery shop to buy vegetables. At the grocery shop he gives half of his 5 Rupee coins and in return receives the same number of 1 Rupee coins. Next he goes to a dairy shop to buy milk and butter and gives all 2 Rupee coins and in return gets thirty 5 Rupee coins which increases the number of 5 Rupee coins to 75% more than the original number. If the number of 1 Rupee coins now is 50, the number of 1 Rupee and 5 Rupee coins originally were:
- (1) 10, 60      (2) 10, 70  
(3) 10, 80      (4) None of the above
72. Sukriti and Saloni are athletes. Sukriti covers a distance of 1 km in 5 minutes and 50 seconds, while Saloni covers the same distance in 6 minutes and 4 seconds. If both of them start together and run at uniform speed, by what distance will Sukriti win a 5 km mini marathon:
- (1) 150 m      (2) 200 m      (3) 175 m      (4) 225 m

**Instructions for questions 69 and 70: Read the following information carefully and answer the questions**

A warship and a submarine (completely submerged in water) are moving horizontally in a straight line. The Captain of the warship observes that the submarine makes an angle of depression of  $30^\circ$ , and the distance between them from the point of observation is 50 km. After 30 minutes, the angle of depression becomes  $60^\circ$ .

73. Find the ratio of shaded area to unshaded area.



- (1)  $\frac{1}{5}(\sqrt{21} - 2)$                       (2)  $\frac{1}{5}(3\sqrt{7} - 2)$   
 (3)  $\frac{1}{5}(3\sqrt{7} - 2\sqrt{3})$                       (4) None of the above

74. A cylindrical overhead tank is filled by two pumps – P1 and P2. P1 can fill the tank in 8 hours while P2 can fill the tank in 12 hours. There is a pipe P3 which can empty the tank in 8 hours. Both the pumps are opened simultaneously. The supervisor of the tank, before going out on a work, sets a timer to open P3 when the tank is half filled so that tank is exactly filled up by the time he is back. Due to technical fault P3 opens when tank is one third filled. If the supervisor comes back as per the plan what percent of the tank is still empty?

- (1) 25% tank                                      (2) 12% tank  
 (3) 10% tank                                      (4) None of the above

75. A ping pong ball is dropped from a 45 metres high multi-storey building. The ball bounces back three fifth of the distance each time before coming to rest. The total distance traversed by the ball is:

- (1) 150 m    (2) 180 m  
 (3) 175 m    (4) None of the above

76. A petrol tank at a filling station has a capacity of 400 litres. The attendant sells 40 litres of petrol from the tank to one customer and then replenishes it with kerosene oil. This process is repeated with six customers. What quantity of pure petrol will the seventh customer get when he purchases 40 litres of petrol?

- (1) 20.50 litres                                  (2) 21.25 litres  
 (3) 24.75 litres                                  (4) 22.40 litres

77. A doctor has decided to prescribe two new drugs D1 and D2 to 200 heart patients such that 50 get drug

D1, 50 get drug D2 and 100 get both. The 200 patients are chosen so that each had 80% chance of having a heart attack if given neither of the drugs. Drug D1 reduces the probability of a heart attack by 35 %, while drug D2 reduces the probability by 20%. The two drugs when taken together, work independently. If a patient, selected randomly from the chosen 200 patients, has a heart attack then the probability that the selected patient was given both the drug is:

- (1) 0.42                      (2) 0.49                      (3) 0.56                      (4) 0.40

78. Bennett distribution company, a subsidiary of a major cosmetics manufacturer Bavlon, is forecasting the zonal sales for the next year. Zone I with current yearly sales of Rs. 193.8 lakh is expected to achieve a sales growth of 7.25%; Zone II with current sales of Rs. 79.3 lakh is expected to grow by 8.2%; and Zone III with sales of Rs. 57.5 lakh is expected to increase sales by 7.15%. What is the Bennett's expected sales growth for the next year?

- (1) 7.46%                      (2) 7.53%                      (3) 7.88%                      (4) 7.41%

79. M/s. Devi Radiograms, a shop which sells electronic gadgets, marks its merchandise 35% above the purchase price. Until four months ago, purchase price of one Philips DVD player was Rs. 3,000. During the last four months M/s. Devi Radiograms has received four monthly consignments of Philips DVD player at the purchase price of Rs. 2,750, Rs. 2,500, Rs. 2,400, and Rs. 2250. The average rate of decrease in the purchase price of DVD player during these four months is:

- (1) 7.51%                      (2) 8.20%                      (3) 6.94%                      (4) 7.03%

80. The coefficient of  $x^7$  in the expansion of  $(1 - x^2 + x^3)(1 + x)^{10}$  is:

- (1) 75    (2) 78  
 (3) 85    (4) None of the above

81. An arc AB of a circle subtends an angle  $x$  radian at centre O of the circle. If the area of the sector AOB is equal to the square of the length of the arc AB, then  $x$  is:

- (1) 0.5    (2) 1.0  
 (3) 0.75    (4) None of the above

82. If there is threefold increase in all the sides of a cyclic quadrilateral, then the percentage increase in its area will be:

- (1) 81%    (2) 9%  
 (3) 900%    (4) None of the above

## SECTION-IV (Part 1)

### Instructions for questions 83-87:

Read carefully the four passages that follow and answer the questions given at the end of each passage:

#### **PASSAGE I**

The most important task is revitalizing the institution of independent directors. The independent directors of a company should be faithful fiduciaries protecting, the long-term interests of shareholders while ensuring fairness to employees, investor, customer, regulators, the government of the land and society. Unfortunately, very often, directors are chosen based of friendship and, sadly, pliability. Today, unfortunately, in the majority of cases, independence is only true on paper.

The need of the hour is to strengthen the independence of the board. We have to put in place stringent standards for the independence of directors. The board should adopt global standards for director-independence, and should disclose how each independent director meets these standards. It is desirable to have a comprehensive report showing the names of the company employees of fellow board members who are related to each director on the board. This report should accompany the annual report of all listed companies.

Another important step is to regularly assess the board members for performance. The assessment should focus on issues like competence, preparation, participation and contribution. Ideally, this evaluation should be performed by a third party. Underperforming directors should be allowed to leave at the end of their term in a gentle manner so that they do not lose face. Rather than being the rubber stamp of a company's management policies, the board should become a true active partner of the management. For this, independent directors should be trained in their in their in roles and responsibilities. Independent directors should be trained on the business model and risk model of the company, on the governance practices, and the responsibilities of various committees of the board of the company. The board members should interact frequently with executives to understand operational issues. As part of the board meeting agenda, the independent directors should have a meeting among themselves without the management being present.

The independent board members should periodically review the performance of the company's CEO, the internal directors and the senior management. This has to be based on clearly defined objective criteria, and these criteria should be known to the CEO and other executive directors well before the start of the evolution period. Moreover, there should be a clearly laid down procedure for communicating the board's review to the CEO and his/her team of executive directors. Managerial remuneration should be based on such reviews.

Additionally, senior management compensation should be determined by the board in a manner that is fair to all stakeholders. We have to look at three important criteria in deciding managerial remuneration-fairness accountability and transparency. Fairness of compensation is determined by how employees and investors react to the compensation of

the CEO. Accountability is enhanced by splitting the total compensation into a small fixed component and a large variable component. In other words, the CEO, other executive directors and the senior management should rise or fall with the fortunes of the company. The variable component should be linked to achieving the long-term objectives of the firm. Senior management compensation should be reviewed by the compensation committee of the board consisting of only the independent directors. This should be approved by the shareholders. It is important that no member of the internal management has a say in the compensation of the CEO, the internal board members or the senior management.

The SEBI regulations and the CII code of conduct have been very helpful in enhancing the level of accountability of independent directors. The independent directors should decide voluntarily how they want to contribute to the company. Their performance should decide voluntarily how they want to contribute to the company. Their performance should be appraised through a peer evaluation process. Ideally, the compensation committee should decide on the compensation of each independent director based on such a performance appraisal.

Auditing is another major area that needs reforms for effective corporate governance. An audit is the Independent examination of financial transactions of any entity to provide assurance to shareholder and other stakeholders that the financial statements are free of material misstatement. Auditors are qualified professionals appointed by the shareholders to report on the reliability of financial statements prepared by the management. Financial markets look to the auditor's report for an independent opinion on the financial and risk situation of a company. We have to separate such auditing from other services. For a truly independent opinion, the auditing firm should not provide services that are perceived to be materially in conflict with the role of the auditor. These include investigations, consulting advice, sub contraction of operational activities normally undertaken by the management, due diligence on potential acquisitions or investments, advice on deal structuring, designing/implementing IT systems, bookkeeping, valuations and executive recruitment. Any departure from this practice should be approved by the audit committee in advance. Further, information on any such exceptions must be disclosed in the company's quarterly and annual reports.

To ensure the integrity of the audit team, it is desirable to rotate auditor partners. The lead audit partner and the audit partner responsible for reviewing a company's audit must be rotated at least once every three to five years. This eliminates the possibility of the lead auditor and the company management getting into the kind of close, cozy relationship that results in lower objectivity in audit opinions. Further, a registered auditor should not audit a chief accounting office was associated with the auditing firm. It is best that members of the audit teams are prohibited from taking up employment

in the audited corporations for at least a year after they have stopped being members of the audit team.

A competent audit committee is essential to effectively oversee the financial accounting and reporting process. Hence, each member of the audit committee must be 'financially literate', further, at least one member of the audit committee, preferably the chairman, should be a financial expert—a person who has an understanding of financial statements and accounting rules, and has experience in auditing. The audit committee should establish procedures for the treatment of complaints received through anonymous submission by employees and whistleblowers. These complaints may be regarding questionable accounting or auditing issues, any harassment to an employee or any unethical practice in the company. The whistleblowers must be protected.

Any related-party transaction should require prior approval by the audit committee, the full board and the shareholders if it is material. Related parties are those that are able to control or exercise significant influence. These include; parent-subsidiary relationships; entities under common control; individuals who, through ownership, have significant influence over the enterprise and close members of their families; and key management personnel.

Accounting standards provide a framework for preparation and presentation of financial statements and assist auditors in forming an opinion on the financial statements. However, today, accounting standards are issued by bodies comprising primarily of accountants. Therefore, accounting standards do not always keep pace with changes in the business environment. Hence, the accounting standards-setting body should include members drawn from the industry, the profession and regulatory bodies. This body should be independently funded.

Currently, an independent oversight of the accounting profession does not exist. Hence, an independent body should be constituted to oversee the functioning of auditors for Independence, the quality of audit and professional competence. This body should comprise a "majority of non-practicing accountants to ensure independent oversight. To avoid any bias, the chairman of this body should not have practiced as an accountant during the preceding five years. Auditors of all public companies must register with this body. It should enforce compliance with the laws by auditors and should mandate that auditors must maintain audit working papers for at least seven years.

To ensure the materiality of information, the CEO and CFO of the company should certify annual and quarterly reports. They should certify that the information in the reports fairly presents the financial condition and results of operations of the company, and that all material facts have been disclosed. Further, CEOs and CFOs should certify that they have established internal controls to ensure that all information relating to the operations of the company is freely available to the auditors and the audit committee. They should also certify that they have evaluated the effectiveness of these controls within ninety days prior to the report. False certifications by the CEO and CFO should be subject to significant criminal penalties (fines and imprisonment, if

willful and knowing). If a company is required to restate its reports due to material non-compliance with the laws, the CEO and CFO must face severe punishment including loss of job and forfeiting bonuses or equity-based compensation received during the twelve months following the filing.

**83.** The problem with the independent directors has been that:

- I. Their selection has been based upon their compatibility with the company management
- II. There has been lack of proper training and development to improve their skill set
- III. Their independent views have often come in conflict with the views of company management. This has hindered the company's decision-making process
- IV. Stringent standards for independent directors have been lacking

- |                         |                         |
|-------------------------|-------------------------|
| (1) I and II only       | (2) I, II, and III only |
| (3) II, II, and IV only | (4) I, II and IV only   |

**84.** Which of the following, according to author, does not have an impact on effective corporate governance?

- i. Increased role and importance of independent directors
- ii. Increased compensation to independent directors
- iii. Not hiring audit firms for other services
- iv. Stringent monitoring and control of related party transactions

**85.** To improve the quality and reliability of the information reported in the financial statements:

- I. Accounting standards should keep pace with the dynamic business environment
- II. There should be a body of internal auditors to oversee the functioning of external auditors
- III. Reports should be certified by key company officials
- IV. Accounting standards should be set by a body comprising of practicing accountants only and this body should be funded from a corpus built up from the contributions made by the companies

- |                |                    |
|----------------|--------------------|
| (1) I, and II  | (2) II, and III    |
| (3) I, and III | (4) I, III, and IV |

**86.** Which of the following may not help in improving in the accountability of management to the shareholders?

- i. A third party assessment of the performance of independent directors
- ii. Rotation of audit partner
- iii. Increasing the fixed component in the salary structure of the management
- iv. Laying down a proper procedure for handling complaints regarding unethical practices

**87.** The author of the passage does not advocate:

- i. Increased activism of independent directors
- ii. Measures to improve the independence of auditors
- iii. Framing the accounting standards in the light of changing business conditions





**PASSAGE III**

The broad scientific understanding today is that our planet is experiencing a warming trend over and above natural and normal variations that is almost certainly due to human activities associated with large-scale manufacturing. The process began in the late 1700s with the Industrial Revolution, when manual labor, horsepower, and water power began to be replaced by or enhanced by machines. This revolution, over time, shifted Britain, Europe, and eventually North America from largely agricultural and trading societies to manufacturing ones, relying on machinery and engines rather than tools and animals.

The Industrial Revolution was at heart a revolution in the use of energy and power. Its beginning is usually dated to the advent of the steam engine, which was based on the conversion of chemical energy in wood or coal to thermal energy and then to mechanical work primarily the powering of industrial machinery and steam locomotives. Coal eventually supplanted wood because, pound for pound, coal contains twice as much energy as wood (measured in BTUs, or British thermal units, per pound) and because its use helped to save what was left of the world's temperate forests. Coal was used to produce heat that went directly into industrial processes, including metallurgy, and to warm buildings, as well as to power steam engines. When crude oil came along in the mid- 1800s, still a couple of decades before electricity, it was burned, in the form of kerosene, in lamps to make light replacing whale oil. It was also used to provide heat for buildings and in manufacturing processes, and as a fuel for engines used in industry and propulsion.

In short, one can say that the main forms in which humans need and use energy are for light, heat, mechanical work and motive power, and electricity which can be used to provide any of the other three, as well as to do things that none of those three can do, such as electronic communications and information processing. Since the Industrial Revolution, all these energy functions have been powered primarily, but not exclusively, by fossil fuels that emit carbon dioxide (CO<sub>2</sub>),

To put it another way, the Industrial Revolution gave a whole new prominence to what Rochelle Lefkowitz, president of Pro-Media Communications and an energy buff, calls "fuels from hell" - coal, oil, and natural gas. All these fuels from hell come from underground, are exhaustible, and emit CO<sub>2</sub> and other pollutants when they are burned for transportation, heating, and industrial use. These fuels are in contrast to what Lefkowitz calls "fuels from heaven" -wind, hydroelectric, tidal, biomass, and solar power. These all come from above ground, are endlessly renewable, and produce no harmful emissions.

Meanwhile, industrialization promoted urbanization, and urbanization eventually gave birth to suburbanization. This trend, which was repeated across America, nurtured the development of the American car culture, the building of a national highway system, and a mushrooming of suburbs around American cities, which reweave the fabric of American life. Many other developed and developing countries followed the American model, with all its upsides and downsides. The result is that today we have suburbs and ribbons of highways that run in, out, and around not only America's major cities,

but China's, India's, and South America's as well. And as these urban areas attract more people, the sprawl extends in every direction.

All the coal, oil, and natural gas inputs for this new economic model seemed relatively cheap, relatively inexhaustible, and relatively harmless-or at least relatively easy to clean up afterward. So there wasn't much to stop the juggernaut of more people and more development and more concrete and more buildings and more cars and more coal, oil, and gas needed to build and power them. Summing it all up, Andy Karsner, the Department of Energy's assistant secretary for energy efficiency and renewable energy, once said to me: "We built a really inefficient environment with the greatest efficiency ever known to man."

Beginning in the second half of the twentieth century, a scientific understanding began to emerge that an excessive accumulation of largely invisible pollutants-called greenhouse gases - was affecting the climate. The buildup of these greenhouse gases had been under way since the start of the Industrial Revolution in a place we could not see and in a form we could not touch or smell. These greenhouse gases, primarily carbon dioxide emitted from human industrial, residential, and transportation sources, were not piling up along roadsides or in rivers, in cans or empty bottles, but, rather, above our heads, in the earth's atmosphere. If the earth's atmosphere was like a blanket that helped to regulate the planet's temperature, the CO<sub>2</sub> buildup was having the effect of thickening that blanket and making the globe warmer.

Those bags of CO<sub>2</sub> from our cars float up and stay in the atmosphere, along with bags of CO<sub>2</sub> from power plants burning coal, oil, and gas, and bags of CO<sub>2</sub> released from the burning and clearing of forests, which releases all the carbon stored in trees, plants, and soil. In fact, many people don't realize that deforestation in places like Indonesia and Brazil is responsible for more CO<sub>2</sub> than all the world's cars, trucks, planes, ships, and trains combined - that is, about 20 percent of all global emissions. And when we're not tossing bags of carbon dioxide into the atmosphere, we're throwing up other greenhouse gases, like methane (CH<sub>4</sub>) released from rice farming, petroleum drilling, coal mining, animal defecation, solid waste landfill sites, and yes, even from cattle belching.

Cattle belching? That's right-the striking thing about greenhouse gases is the diversity of sources that emit them. A herd of cattle belching can be worse than a highway full of Hummers. Livestock gas is very high in methane, which, like CO<sub>2</sub>, is colorless and odorless. And like CO<sub>2</sub>, methane is one of those greenhouse gases that, once released into the atmosphere, also absorb heat radiating from the earth's surface. "Molecule for molecule, methane's heat-trapping power in the atmosphere is twenty-one times stronger than carbon dioxide, the most abundant greenhouse gas.." reported *Science World* (January 21, 2002). "With 1.3 billion cows belching almost constantly around the world (100 million in the United States alone), it's no surprise that methane released by livestock is one of the chief global sources of the gas, according to the U.S. Environmental Protection Agency ... 'It's part of their normal digestion process,' says Tom Wirth of the EPA. 'When they chew their

cul, they regurgitate [spit up] some food to rechew it, and all this gas comes out.' The average cow expels 600 liters of methane a day, climate researchers report."

What is the precise scientific relationship between these expanded greenhouse gas emissions and global warming? Experts at the Pew Center on Climate Change offer a handy summary in their report "Climate Change 101. " Global average temperatures, notes the Pew study, "have experienced natural shifts throughout human history. For example; the climate of the Northern Hemisphere varied from a relatively warm period between the eleventh and fifteenth centuries to a period of cooler temperatures between the seventeenth century and the middle of the nineteenth century. However, scientists studying the rapid rise in global temperatures during the late twentieth century say that natural variability cannot account for what is happening now." The new factor is the human factor-our vastly increased emissions of carbon dioxide and other greenhouse gases from the burning of fossil fuels such as coal and oil as well as from deforestation, large-scale cattle-grazing, agriculture, and industrialization.

"Scientists refer to what has been happening in the earth's atmosphere over the past century as the 'enhanced greenhouse effect'", notes the Pew study. By pumping man-made greenhouse gases into the atmosphere, humans are altering the process by which naturally occurring greenhouse gases, because of their unique molecular structure, trap the sun's heat near the earth's surface before that heat radiates back into space.

"The greenhouse effect keeps the earth warm and habitable; without it, the earth's surface would be about 60 degrees Fahrenheit colder on average. Since the average temperature of the earth is about 45 degrees Fahrenheit, the natural greenhouse effect is clearly a good thing. But the enhanced greenhouse effect means even more of the sun's heat is trapped, causing global temperatures to rise. Among the many scientific studies providing clear evidence that an enhanced greenhouse effect is under way was a 2005 report from NASA's Goddard Institute for Space Studies. Using satellites, data from buoys, and computer models to study the earth's oceans, scientists concluded that more energy is being absorbed from the sun than is emitted back to space, throwing the earth's energy out of balance and warming the globe."

91. Which of the following statements is correct?

- (I) Greenhouse gases are responsible for global warming. They should be eliminated to save the planet
- (II) CO<sub>2</sub> is the most dangerous of the greenhouse gases. Reduction in the release of CO<sub>2</sub> would surely bring down the temperature
- (III) The greenhouse effect could be traced back to the industrial revolution. But the current development and the patterns of life have enhanced their emissions
- (IV) Deforestation has been one of the biggest factors contributing to the emission of greenhouse gases

Choose the correct option:

- (1) I and III
- (2) II and III
- (3) II, III, and IV
- (4) III and IV

92. Which of the following statements is incorrect?

- i. Natural and controlled greenhouse effect is good for earth
- ii. As a measure to check global warming, prevention of destruction of forests needs to be given priority over reduction in fuel emission
- iii. Greenhouse gases trap the sun's heat from radiating back into the space making the earth surface warmer
- iv. It is for the first time in human evolution that the global temperatures have started to witness a shift

93. Increasing warming of earth has been due to:

- (I) Increased manual intervention in the manufacturing process
  - (II) The fallout of mechanization of production
  - (III) Industrial revolution
  - (IV) Over reliance on non- replenishable energy sources
- Choose the correct option:

- (1) I, II, and IV
- (2) I, III and IV
- (3) I, II, III, and IV
- (4) II, III, and IV

94. Which of the following according to the passage are the features of "fuels from heaven"?

- (I) Replenishability
- (II) Storability
- (III) Cost-effectiveness
- (IV) Harmlessness

- (1) I and II
- (2) II and III
- (3) III, and IV
- (4) I and IV

#### **PASSAGE IV**

"All raw sugar comes to us this way. You see, it is about the color of maple or brown sugar, but it is not nearly so pure, for it has a great deal of dirt mixed with it when we first get it."

"Where does it come from?" inquired Bob.

"Largely from the plantations of Cuba and Porto Rico. Toward the end of the year we also get raw sugar from Java, and by the time this is refined and ready for the market the new crop from the West Indies comes along. In addition to this we get consignments from the Philippine Islands, the Hawaiian Islands, South America, Formosa, and Egypt. I suppose it is quite unnecessary to tell you young men anything of how the cane is grown; of course you know all that."

"I don't believe we do, except in a general way," Bob admitted honestly. "I am ashamed to be so green about a thing at which Dad has been working for years. I don't know why I never asked about it before. I guess I never was interested. I simply took it for granted."

"That's the way with most of us," was the superintendent's kindly answer. "We accept many things in the world without actually knowing much about them, and it is not until something brings our ignorance before us that we take the pains to focus our attention and learn about them. So do not be ashamed that you do not know about sugar raising; I didn't

when I was your age. Suppose, then, I give you a little idea of what happens before this raw sugar can come to us."

"I wish you would," exclaimed both boys in a breath.

"Probably in your school geographies you have seen pictures of sugar-cane and know that it is a tall perennial not unlike our Indian corn in appearance; it has broad, flat leaves that sometimes measure as many as three feet in length, and often the stalk itself is twenty feet high. This stalk is jointed like a bamboo pole, the joints being about three inches apart near the roots and increasing in distance the higher one gets from the ground."

"How do they plant it?" Bob asked.

"It can be planted from seed, but this method takes much time and patience; the usual way is to plant it from cuttings, or slips. The first growth from these cuttings is called plant cane; after these are taken off the roots send out ratoons or shoots from which the crop of one or two years, and sometimes longer, is taken. If the soil is not rich and moist replanting is more frequently necessary and in places like Louisiana, where there is annual frost, planting must be done each year. When the cane is ripe it is cut and brought from the field to a central sugar mill, where heavy iron rollers crush from it all the juice. This liquid drips through into troughs from which it is carried to evaporators where the water portion of the sap is eliminated and the juice left; you would be surprised if you were to see this liquid. It looks like nothing so much as the soapy, bluish-gray dish-water that is left in the pan after the dishes have been washed."

"A tempting picture!" Van exclaimed.

"I know it. Sugar isn't very attractive during its process of preparation," agreed Mr. Hennessey. "The sweet liquid left after the water has been extracted is then poured into vacuum pans to be boiled until the crystals form in it, after which it is put into whirling machines, called centrifugal machines that separate the dry sugar from the syrup with which it is mixed. This syrup is later boiled into molasses. The sugar is then dried and packed in these burlap sacks such as you see here, or in hogsheads, and shipped to refineries to be cleansed and whitened."

"Isn't any of the sugar refined in the places where it grows?" queried Bob.

"Practically none. Large refining plants are too expensive to be erected everywhere; it therefore seems better that they should be built in our large cities, where the shipping facilities are good not only for receiving sugar in its raw state but for distributing it after it has been refined and is ready for sale. Here, too, machinery can more easily be bought and the business handled with less difficulty."

95. Which one of the following is not an essential condition for setting up sugar refining plants?

- (1) Facilities for transportation of machinery
- (2) Facilities for import of raw material
- (3) Facilities for transportation of finished products
- (4) Proximity to the raw material sources

96. Which of the following is the correct sequence of sugar preparation process?

- i. Cutting → Crushing → Evaporation → Boiling → Whirling.
- ii. Boiling → Crushing → Evaporation → Whirling → Cutting.
- iii. Cutting → Boiling → Evaporation → Crushing → Whirling.
- iv. Whirling → Crushing → Boiling → Evaporation → Cutting.

97. Which of the following statements, as per the paragraph, is incorrect?

- i. Sugar in its raw form is brownish in colour due to the presence of dirt
- ii. After evaporation, cane juice looks bluish – gray in colour
- iii. Molasses is obtained as a by-product from the process of sugar production
- iv. Cane plantation and sugar production process is widely and equally spread across the countries.

## SECTION – IV (Part 2)

**Instructions for questions 98 - 102:** Each of the questions presents a sentence, part of which is underlined. Beneath the sentence you will find four ways of phrasing the underlined part. Follow the requirements of standard written English to choose your answer, paying attention to grammar, word choice, and sentence construction. Select the answer that produces the most effective sentence; your answer should make the sentence clear, exact, and free of grammatical error. It should also minimize awkwardness, ambiguity, and redundancy.

- 98.** When I first became brand manager, we were spending most of our advertising budget to promote our products in the winter. It had worked in North America and Europe, where people caught colds mainly in that season. Our monthly volume data suggested however stubbornly we were shipping a lot of VapoRub between July and September, the hot monsoon season.
- Our monthly volume data suggested however that stubbornly
  - However, our monthly volume data stubbornly suggested that
  - However, our volume data suggested stubbornly that monthly
  - Stubbornly speaks our volume data on a monthly basis, however that
- 99.** The growth rate of companies in several sectors like food, personal care, automobiles, banking and retail in the developed world are flattening. These companies for maintaining their growth rates and margins are looking upon the emerging market in Asia and Latin America.
- These companies for maintaining their growth rates and margins are looking upon the emerging markets in Asia and Latin America.
  - To maintain their growth rates and margins these companies look at the emerging markets in Asia and Latin America.
  - The emerging markets of Asia and Latin America are looked at by these companies to maintain their growth rates and margins
  - These companies are looking at the emerging markets in Asia and Latin America for maintaining their growth rates and margins.
- 100.** People who do good work to the corporation wherever they are whatever they do will be assets to the valued corporation.
- good work to the corporation wherever they are whatever they do will be assets to the valued corporation
  - good work – wherever they are, whatever they do – will be valued assets to the corporation
  - whatever good they do the corporation, wherever they are will be valued assets
  - good to the corporation whatever work they do wherever they are will be valued assets
- 101.** From what landscapes or flowerbeds would future painters draw their inspiration? Would move poets to craft their symphonies, composers to contemplate the meaning of God, and philosophers write their sonnets.
- painters draw their inspiration? Would move poets to craft their symphonies, composers to contemplate the meaning of God, and philosophers write their sonnets.
  - painters draw their inspiration? Would move poets to write their sonnets, composers to craft their symphonies and philosophers to contemplate the meaning of God
  - philosophers draw their inspiration? Would move poets to write their sonnets, composers to craft their symphonies, and painters to contemplate the meaning of God
  - philosophers to contemplate the meaning of God? Would move painters to draw their inspiration, composers to write their sonnets, and poets to craft their symphonies?
- 102.** Car sales in the country rose at an annualized rate of 7.8% in June, helped by a spate of new models and falling borrowing costs bringing new buyers back.
- spate of new models and falling borrowing costs bringing new buyers back
  - luring of new models and falling borrowing costs bringing new buyers back
  - bringing of new models back, spate in borrowing costs, and falling new buyers
  - bringing back the borrowing costs, falling in new models, and spate in new models.
- Instructions for question 103 - 107:** Select the most suitable synonym for the underlined word in the sentence.
- 103.** The book did not get much acclaim because of its pedantic style of writing.
- |              |                 |
|--------------|-----------------|
| (1) radical  | (2) dogmatic    |
| (3) esoteric | (4) applicative |
- 104.** The policy announcement was made to the much chagrin of the farmers.
- |              |                   |
|--------------|-------------------|
| (1) euphoria | (2) placation     |
| (3) glee     | (4) mortification |
- 105.** The leader summoned the group and told that the time has come to act and not genuflect.
- |              |                   |
|--------------|-------------------|
| (1) grovel   | (2) procrastinate |
| (3) renounce | (4) incriminate   |

106. The stentorian honks of the marching fleet could be heard for miles.

- (1) rhythmic  
(2) euphonious  
(3) blaring  
(4) subdues

107. Noticing the behavior of the audience in the amphitheater the performer was more bemused than bitter.

- (1) amused (2) bewildered  
(3) enlightened (4) enthused

**Instructions for questions 108- 112:** Select the most suitable antonym for the underlined word in the sentences.

108. The arguments put forth by the speaker were rather specious, but somehow he got away with them.

- (1) fallacious (2) unfeigned  
(3) obscure (4) pernicious

109. The trends suggest that most of the new members got themselves deregistered within 7 - 10 days of their joining due to the exacting instructor.

- (1) insouciant (2) discourteous  
(3) grievous (4) fastidious

110. The congregation was awestruck at the sight of the levitating saint.

- (1) gravitating (2) enchanting  
(3) captivating (4) vacillating

111. By the time she could realize the gravity of the situation she found herself ensnared in the labyrinth of accusations.

- (1) seized (2) enmeshed  
(3) intrigued (4) released

112. The sub-prime crisis has pushed millions of people in the quagmire of financial indebtedness.

- (1) predicament (2) swamp  
(3) tranquility (4) impasse

**Instructions for questions 113 - 116:** Select the most appropriate set of words from the given choices to fill in the blanks.

113. The organization takes its cue from the person on the top. I always told our business leaders their personal \_\_\_ determined their organization's \_\_\_.

- (1) serendipity; faux pas  
(2) predilection; despair  
(3) intensity; success  
(4) oddity; conformity

114. The Himalayas ran from east to west and cut off the cold winds from the north. This allowed agriculture to prosper and \_\_\_ wealth, but it also \_\_\_ barbarian invaders from the north.

- (1) attracted; dissipated (2) created; attracted  
(3) created; restricted (4) attracted; evicted

115. Our \_\_\_ diversity may also be of some value. Because we have always learned to live with pluralism, it is possible that we may be better prepared to \_\_\_ the diversity of global economy.

- (1) stupefying; negotiate (2) plural; alleviate  
(3) variegated; annihilate (4) dreary; exasperate

116. My inward petition was instantly \_\_\_\_. First, a delightful cold wave descended over my back and under my feet, \_\_\_\_\_ all discomfort.

- (1) acknowledged; banishing  
(2) repudiated; infuriating  
(3) acceded; exacerbating  
(4) decimated; assuaging

**Instructions for questions 117 - 122:** A number of sentences are given below which, when properly sequenced, form a COHERENT PARAGRAPH. Choose the most LOGICAL ORDER of sentence from the choices given to construct a COHERENT PARAGRAPH.

117.

- I. As a retention strategy, the company has issued many schemes including ESOPs.
- II. Given the track record and success of our employees, other companies often look to us as hunting ground for talent.
- III. The growth of the Indian economy has led to an increased requirement for talented managerial personnel and we believe that the talented manpower is our key strength.
- IV. Further, in order to mitigate the risk we place considerable emphasis on development of leadership skills and on building employee motivation.

- (1) I, II, III, IV (2) II, I, IV, III  
(3) II, I, IV (4) IV, I, III

118.

- I. It reverberates throughout the entire Universe. And you are transmitting that frequency *with your thoughts!*
- II. The frequency you transmit reaches beyond cities, beyond cities, beyond countries beyond the world.
- III. You are a *human* transmission tower, and you are more powerful than any television tower created on earth.
- IV. Your transmission creates your life and it creates the world.

- (1) IV, I, III, II  
(3) III, IV, II, I

- (2) II, IV, III, I  
(4) I, II, III, IV

**119.**

- I. Asian economies will need alternative sources of growth to compensate for the rapid fall in demand from the western markets.
- II. But the crisis has exposed the limits of region's dominant economic- growth model.
- III. The export- led model that propelled many Asian economies so effectively for the past 30 years must be adapted to a different global economic context.
- IV. Asia is less exposed to the financial turmoil than the west is, because Asian countries responded to the previous decade's regional crisis by improving their current-account positions, accumulating reserves, and ensuring that their banking systems operated prudently.

- (1) IV, II, I, III  
(3) III, I, II, IV

- (2) I, II, III, IV  
(4) II, III, IV

**120.**

- I. The dangers of conflicting irrational majoritarianism with enlightened consensus are, indeed, great in developing democracy.
- II. Real democracy is about mediating the popular will through a network of institutional structure and the law of the land.
- III. While law making and governance are meant to articulate the latter, the judiciary is supposed to protect the former from any kind of excess that might occur, unwittingly or otherwise, in the conduct of legislative and governmental functions.
- IV. The principle of separation of powers is meant to embody a desirable tension between individual rights and social consensus.

- (1) I, II, III, IV  
(3) IV, III, I, II

- (2) II, I, III, IV  
(4) II, III, IV

**121.**

- I. First may be necessary for immediate relief.
- II. However, to cure the problem from the root the treatment at the elemental level is a must.
- III. Therefore synergy of modern medical science and ancient Indian wisdom is in the interest of humanity.
- IV. Allopathic treatment is symptomatic while Ayurveda treats at an elemental level.

- (1) IV, II, I, III  
(3) IV, III, II

- (2) IV, I, II, III  
(4) II, IV, III

**122.**

- I. He somehow knew he would find what he was looking for. So, with missionary zeal, he started to climb.
- II. So instead, for perhaps the first in his life he shed the shackles of reason and placed his trust in his intuition.
- III. At first he thought about hiring a Sherpa guide to aid him in his climb through the mountains, but, for some strange reason, his instincts told him this was one journey he would have to make alone.
- IV. The next morning, as the first rays of the Indian sun danced along the colorful horizon, Julian set out his trek to the lost land of Savana.

- (1) I, II, III, IV  
(3) III, IV, I, II

- (2) I, III, II, IV  
(4) IV, III, II, I

# Answer Key

SECTION I			
Q.	Ans.	Q.	Ans.
1	4	18	4
2	2	19	4
3	1	20	2
4	4	21	3
5	2	22	1
6	2	23	3
7	1	24	1
8	4	25	
9	2	26	3
10	3	27	3
11	2	28	3
12	1	29	1,3
13	3	30	1
14	1	31	3
15	2	32	4
16	1	33	3
17	4	34	3

SECTION II			
Q.	Ans.	Q.	Ans.
35	3	52	2
36	1	53	3
37	4	54	1
38	2		
39	1		
40	3		
41	1		
42	2		
43	3		
44	3		
45	3		
46	2		
47	2		
48	3		
49	4		
50	4		
51	3		

SECTION III			
Q.	Ans.	Q.	Ans.
55	1	70	4
56	3	71	4
57	4	72	2
58	2	73	4
59	2	74	3
60	2	75	2
61	4	76	2
62	4	77	1
63	2	78	1
64	3	79	3
65	3	80	2
66	2	81	1
67	1	82	2
68	4		
69	1		

SECTION IV - PART I	
Q.	Ans.
83	4
84	2
85	3
86	3
87	4
88	2
89	4
90	2
91	4
92	4
93	4
94	4
95	4
96	1
97	4

SECTION IV - PART II			
Q.	Ans.	Q.	Ans.
98	2	113	3
99	4	114	2
100	2	115	1
101	2	116	1
102	1	117	3
103	3	118	3
104	4	119	1
105	1	120	3
106	3	121	2
107	2	122	4
108	2		
109	1		
110	1		
111	4		
112	3		