DATA INTER PRETATION AND SUFFICIENCY

Directions (Qs. 1 to 4) : Study the following table to answer these questions:

Projected Population of Light Motor Vehicles (in Millions)

S. No.	Country	1975	2030
1.	United States	141	382
2.	Japan	120	238
3.	France	67	164
4.	China	63	117
5.	Italy	18	61
6.	Germany	21	58
7.	UK	15	47
8.	Canada	5	17
9.	Switzerland	15	3

1. The average population of LMVs of the middle three countries in 1975 bears to the average population of LMVs of the last three countries a ratio of nearly
   (a) 19 : 4 (b) 11 : 3
   (c) 7 : 2 (d) 5 : 1
2. The percentage growth of the average population of LMVs for the last three countries between the years 1975 and 2030 is approximately
   (a) 71 (b) 212
   (c) 172 (d) 221
3. For China, assuming a linear growth in LMVS population, extrapolate nearly, when will the growth in population be 108% beyond the year 2030?
   (a) 2048 (b) 2050
   (c) 2032 (d) 2038
4. The percentage growth of the projected LMVS population between 1975 and 2030 among the last five countries is maximum in.
   (a) Italy (b) Switzerland
   (c) Canada (d) UK

Directions (Qs. 5 to 8) : Study the following table to inswer these questions:

Allotment of Shares By a Multinational Company

No. of shares Applied for	No. of shares Allotted	Ratio of Allottees to Applicants	No. of Allottees
100	100	1 : 50	8001
200-500	100	2 : 41	7624
600-900	200	1 : 15	6202
1000-3000	200	3 : 28	1515
3100-10000	200	1 : 6	1633
10200-21000	300	2 : 5	404
25000	350	1 : 1	11

5. Find the total number of applicants who had applied for 3100-25000 shares.
   (a) 2048 (b) 10819
   (c) 445 (d) 7562
6. Find the average number of shares allotted to an allottee?
   (a) 100 (b) 150
   (c) 140 (d) 200
7. Find the ratio between the number of applicants who applied for 1000-3000 shares and those for 10200-21000 shares.
   (a) 56 : 15 (b) 15 : 56
   (c) 70 : 3 (d) 14 : 1
8. If the face value of a share is Rs 100 and the company wanted a subscription of 1 lakh rupees, then how much was it oversubscribed?
   (a) Rs 45,000 (b) Rs 4, 500
   (c) Rs 15,000 (d) Rs 10,000

Directions (Qs. 9 to 13) : The forecasts of the World and Asian energy demand for the years 2005, 2010 and 2020 ore given in the table. The demand is given in million barrels per day crude oil equivalent

	2005		2010		2020	
	World	Asia	World	Asia	World	Asia
Petroleum	56.0	8.0	86.0	11.5	108.0	18.0
Natural Gas	38.0	1.5	67.0	2.5	96.0	4.5
Solid fuels	46.0	6.0	54.0	13.0	67.0	15.4
Nuclear	8.0	2.0	9.0	4.8	12.0	5.5
Hydropower	12.0	1.5	14.0	2.2	17.0	4.6
Total	160.0	19.0	230.0	34.0	300.0	48.0

9. Which is the fuel whose proportion in the total energy demand will increase continuously over the period 2005-2020 in Asia?
   (a) Natural Gas
   (b) Both Natural Gas and Hydropower
   (c) Hydropower
   (d) None of the above

10. Which is the fuel whose proportion in the total energy demand will remain unaltered from 2005 to 2010 in Asia?
   (a) Petroleum (b) Solid fuels
   (C) Natural Gas (d) Nucler

11. For which source of energy is the demand in 2020 as a ratio of demand in 2005 in the Asian region the greatest?
   (a) Natural Gas (b) Nuclear
   (c) Solid fuels (d) Hydropower

12. Which is the fuel for which demand in the rest of the world (excluding Asia) as a proportion of total energy demand of the world (including Asia) shows continuous decrease over the period?
   (a) Solid fuels and Natural Gas
   (b) Hydropower and Petroleum
   (c) Solid fuels and Hydropower
   (d) None of the above

13. Over 2005-2020, which two fuels meet more than 60 percent of the total energy demand of the world and Asia both?
   (a) Nuclear and Hydropower
   (b) Nuclear and Solid fuels
   (c) Hydropower and Solid fuels
   (d) None of the above

Directions (Qs. 14 to 17) : Answer these questions based on the data given in the table which shows the instalment on for monthly repayments (in Rupees) on housing society lons for different periods.

	Repayment Period (Years)			
Loan Amount (Rs.)	**10**	**15**	**20**	**25**
1,00,000	1250	1050	9001	850
2,00,000	2500	2050	1800	1600
10,00,000	12950	10300	9000	8450
15,00,000	19400	15450	13500	12650
20,00,000	259001	20600	18000	16800

14. How much more money would be paid on a loan of Rs. 20,00,000 taken out over 20 year compared to the same loan taken over a period of 15 years ?
   (a) Rs. 4,25,000 (b) Rs. 3,00,000.
   (c) Rs. 5,50,000 (d) Rs. 6,12,000

15. What is the total amount repaid over 25 years on a loan of Rs. 15,00,000?
   (a) Rs. 37,95,000 (b) Rs. 22,50,000
   (C) Rs. 45,30,000 (d) Rs. 55,70,000

16. The monthly repayment on a loan of Rs. 15,00,000 over 20 years is reduced to Rs. 12,500. By how much would this reduce the total amount on the loan over the full period?
   (a) Rs. 2,40,000 (b) Rs. 1,30,000
   (c) Rs. 2,24,000 (d) Rs. 1,26,000

17. Instead of ting a loan of Rs. 10,00,000 with a repayment period of 15 years, the society proposes to take a loan of Rs. 15,00,000 to be paid back in 10 years to provide for a generator set. What is the cumulative financial impact ?
   (a) Rs. 4,74,000 (b) Rs. 4,54,000
   (c) Rs. 5,67,000
   (d) Cannot be assessed

Directions (Qs. 18 to 21): Answer these questions based on the table given the criculation in thousands of five English dailies in th four States during 2002-2003.

News Papers	**Kerala**	**Punjab**	**UP**	**HP**
A	123	227	96	78
B	105	220	117.2	97
C	12.2	14.6	9.7	17.2
D	82.4	44	145	9.3
E	24.4	23	10	100

18. of the five dailies, which has the highest number of circulation?
   (a) A (b) B
   (c) D (d) E

19. What is the difference in the circulation moung the top News Papers?
   (a) 14,200 (b) 15,200
   (c) 13,200 (d) 12,200

10. The newspaper A's circulation in punjab is x times that of the newspaper B's circulation in HP. What is x?

(a) 2.35 (b) 2

(c) 2.75 (d) 2.25

21. The ratio of the circulation of newspaper D in punjab and HP is:

(a) 5.5 : 2 (b) 5 : 2

(c) 6 : 3.41 (d) 5.5 : 1.16

Directions (Qs. 22 to 25): Answer these questions based on the table given below. The table shows number of new female and male employees engaged by 5 employers from 1999 to 2003.

Employer	Gender of employecs	1999	2000	2001	2002	2003	Total
A	Female	4	4	5	10	12	35
	male	5	6	8	12	12	43
B	Female	10	11	9	13	15	58
	male	12	12	13	23	14	74
C	Female	67	66	74	57	89	353
	male	13	11	10	6	9	49
D	Female	4	6	8	2	9	29
	male	3	5	8	6	4	26
E	Female	4	5	4	3	3	18
	male	4	5	2	6	2	20
	Total	**126**	**131**	**141**	**138**	**169**	**705**

22. What was the total number of new employees (female and male) in all the companies in 1999 and 2000?

(a) 234 (b) 257

(c) 235 (d) 256

23. What is the average number of new female employees per company in 2001 ?

(a) 25 (b) 30

(c) 20 (d) 18

24. Of the total number of the new male employees in the all the five companies in 2002. what percentage did companies B,C and D employ collectively?

(a) 66% (b) 62%

(c) 65% (d) 67%

25. What was the ratio of the new female employees to new male employees in Company C in 2000 ?

(a) 1:6 (b) 6:1

(c) 2:3 (d) 3:2

Directions (Qs. 26 to 29): Answer these questions based on the data given in the table below. The toble shows the trends in the relative value in the market of select groups of commodities (1999-2003).

Years

Commodities	1999	2000	2001	2002	2003
Milk	95	92	86	72	76
Cereals	75	68	62	66	60
Fats and Oils	76	70	68	62	58
Gas	82	76	100	98	96
Vegetables	80	62	64	84	88
Fruits	79	74	72	66	73

26. What is the average difference in the relative value of the six commodities in 2003 compared to 1999 ?

(a) +8 (b) -5

(c) -6 (d) +4

27. Which value showed the greatest amount of change in 1999 compared to 2003 ?

(a) Milk (b) Gas

(c) fats and Oils (d) Vegetables

28. Which commodity showed the least variation in value over the period 1999-2003?

(a) Cereals (b) Gas

(c) Vegetables (d) Fruits

29. For which commodities is there a clearly discernible trend of decreasing relative value between 1999-2003 ?

(a) Cereals and Gas

(b) Milk, Cereals, Fats and Oils

(c) Milk, Gas Fats and Oils

(d) None of the above

Directions (Qs. 30 to 33): Answer these questions based on the data given in the following table. The table shows the instalment amounts for monthly repayments (in Rupees) on housing society loans for different periods.

Years

Loan	10	15	20	25
1,00,000	1250	1050	900	850
2,00,000	2500	2050	1800	1600
10,00,000	12950	10300	9000	8450
15,00,000	19400	15450	13500	12650
20,00,000	25900	20600	18000	16800

30. How much more money would be paid on a loan of Rs 20,00,000 taken out over 20 years compared to the same loan taken over a period of 15 years ?
(a) Rs. 3,00,000 (b) Rs. 4,25,000
(c) Rs. 5,50,000 (d) Rs. 6,12,000

31. What is the total amount repaid over 25 years on a loan of Rs. 15,00,000?
(a) Rs. 22,50,000 (b) Rs. 37,95,000
(c) Rs. 45,30,000 (d) Rs. 55,70,000

32. The monthly repayment on a loan of Rs 15,00,000 over 20 years is reduced to Rs. 12500. By how much would this reduce the total amount on the loan over the full period?
(a) Rs 1,30,000 (b) Rs 2,40,000
(c) Rs 2,24,000 (d) Rs 1,26,000

33. Instead of taking a loan of Rs 10,00,000 with a repayment period of 15 years, the society proposes to take a loan of Rs. 15,00,000 to be paid back in 10 years to provide for a generator set. What is the cumulative financial impact?
(a) Rs. 4,54,000 (b) Rs. 4,74,000
(c) Rs. 5,67,000
(d) Can not be assessed

Directions (Qs. 34 to 37) : These questions are based on the following table. The table shows the number of emergencies attended by 6 fire brigade substations during May October 2002:

Sob-Station	May	June	July	Aug.	Sep.	Oct.
A	12	15	17	21	13	17
B	18	21	15	18	18	19
C	10	11	19	21	23	18
D	17	17	19	12	18	10
E	12	15	18	10	21	11
F	14	15	12	13	18	19

34. Number of emergencies attended by the 6 substations was the same in the months of:
(a) May and June (b) June and July
(c) August and September
(d) June and October

35. Which of the following substations showed a greater increase in the number of emergencies attended in August as compared to July ?
(a) A (b) E
(c) D (d) C

36. Which substation attended to the maximum number of complaints in the given period
(a) A (b) B
(c) C (d) F

37. Which two months aggregated over 36% of the total number of emergencies in the six-month period ?
(a) May and June
(b) July and October
(c) Augest and September
(d) July and September

Directions (Qs. 38 to 41): The following table gives the frequency distribution of the final grades of 100 students Mathematics and Physics, Analyse the data presented to answer these questions.

Mathematics Grades

	40-49	50-59	60-69	70-79	80-89	90-99
90-99				4	2	5
80-89			2	3	7	2
70-79			1	7	6	3
60-69	2	5	9	8	5	
50-59	3	3	6	1		
40-49	2	7	7			

38. How many students received grades 80 and above in Mathematics?
(a) 20 (b) 30
(c) 23 (d) 25

39. How many students would qualify for admission to a prime Engineering College that stipulates above 80% in Mathematics and Physics ?
(a) 9 (b) 12
(c) 16 (d) 18

40. The School Trust provides scholarships for higher studies to students who secure 90% and above in Mathematics and Physics. How many students ar eligible for scholarships for higher studies?
(a) 5 (b) 3
(c) 7 (d) 4

41. What percentage of students got less than 70% in both Mathematics and Physics ?
(a) 34 (b) 43
(c) 39 (d) 44

Directions (Qs. 42 to 46): Study the defa given below to onswer these questions :

No. of Units of TVs Sold

	1995	1996	1997	1998	1999
LG	30,000	38,000	36,000	42,000	10,000
Somsung	17000	28,000	33,000	32,000	27,000
Sony	12,500	20,000	35,000	40,000	50,000
National Panasonic	30,000	25,000	22,000	20,000	15,000
Toshiba	15,725	18,625	13,275	14,375	16,000

42. The average annual sale of which brand is the highest ?
(a) LG (b) Sony
(c) National Panasonic
(d) Toshiba

43. Which of the following statements is/are true?
I. LG is showing an increase in sales every year.
II. Samsung has recorded a fall in sales thrice during the given five years period
III. The percentage increase in the number of units sold from 1995 to 1999 is the highest for Sony
IV. The average annual sale of Samsung is more than that of Sony.
(a) III alone (b) I and II
(c) III and IV (d) III and II

44. The installed capacity of each company is 75,000 units and all the units produced by each company are sold. Then the least and the highest values for annual capacity utilisation for any company are respectively:
(a) 16.67% and 66.67%
(b) 17.5% and 72.5%
(c) 14.28% and 75.5%
(d) 5.24% and 95.34%

45. If for 2000 there is a 25% increase in the total sale of TVs and there is a 10% decrease in the sale of Toshiba TVs, then what percentage of the total sales in 2000 is for Toshiba TVs ?
(a) 17% (b) 7.8%
(c) 9.3% (d) 6.3%

46. The brand which showed a decrease of 50% during the given five-year period registered maximum percentage decrease during the period ?
(a) 1995-96 (b) 1996-97
(c) 1997-98 (d) 1998-99

Directions (Qs. 47 to 52) : Loan disbursed by five banks (in Rs crore) are given in the table below.

Year

Banks	1990	1991	1992	1993	1994
A	18	23	45	30	70
B	27	33	18	41	37
C	29	29	22	17	11
D	31	16	28	32	43
E	13	19	27	34	42

47. In which year was the distribution of loans of all the banks put together least compared to the average disbursement of loans over the years?
(a) 1990 (b) 1991
(C) 1992 (d) 1994

48. What was the percentage increase of disbursement of loans of all the banks together from 1992 to 1993 ?
(a) 110% (b) 14%
(c) 10% (d) 11%

49. In which year was the disbursement of loans of banks A and B exactly equal to the total disbursement of loans of banks D and E?
(a) 1991 (b) 1992
(c) 1994 (d) None of these

50. If the minimum target in the succeeding year was 20% of the total disbursement of loans, then how many banks reached the target in 1991?
(a) 1 (b) 2
(c) 3 (d) 4

51. In which banks was the loan disbursement more than 25% of the disbursement of all the banks in 1994 ?
(a) A (b) B
(c) C (d) D

52. By what per cent did the loan disbursement increase from 1990 to 1994 ?
(a) 72 (b) 82
(c) 94 (d) 91

Directions (Qs. 53 to 55) : Use the data in the table given below to answer these questions,

	% of pretein	% of carbo-hydrates	% of fat	Cast per 100g
Food A	10	20	30	Rs.1.80
Food B	20	15	10	Rs. 3.00
Food C	20	10	40	Rs. 2.75

53. What will be cost of purchasing x grams of food A, y grams of food B and z grams of food C?

(a) $Rs.(0.3^2x+1.8^2y+2.75z)$

(b) $\text{Rs.}(1.8x+1.3z+2.75y)$

(c) $\text{Rs.}\left(\frac{0.9}{50}x+\frac{0.3y}{10}+\frac{0.11}{4}z\right)$

(d) Rs (x + y + z)

54. Which of the following diets would supply the most grams of protein ?

(a) 500 g of A (b) 250 g of B

(c) 350 g of C

(d) 200 g of B and 200 g of C

55. All the following diets would supply at least 75 g of fat. Which of the diets costs the least?

(a) 300 g of A (b) 200 g of C

(c) 150 g of A and 100 g of C

(d) 500 g of B and 100 g of A

Directions (Qs. 56 to 59) : Refer the table given below to answer these questions.

Production and Consumption of Cement

Country	Production in million tonnes		Per capital consumption (in kg)	
	1978	1979	1978	19793
Japan	84.89	87.80	689	631
Italy	38.32	39.72	656	582
USSR	129.28	123.01	483	388
West Germany				
France	33.50	35.47	520	482
India	29.06	28.89	506	447
	19.56	18.26	32	25

56. In 1979, the maximum reduction in per capita consumption of cement took place in :

(a) USSR (b) Italy

(C) Japan (d) India

57. In 1979, USSR produced more cement than the combined total of four other countries excluding:

(a) India (b) Japan

(c) Italy (d) France

59. The adverse effect of decline in the consumption of cement in 1979 in comparison to 1978 is likely to be more in:

(a) USSR (b) Italy

(c) France (d) India

59. In 1978 ... had 15 times more per capita cement consumption than that in India

(a) France (b) West Germany

(C) USSR (d) Japan

Directions (Qs. 60 to 64): Answer these question based on the table given below. :

The Hotel Company of India (HCI) owns seven Hotels with the same capacity. The occupancy rates across the seven hotels are given in the following table.

Hotele Name	pleasant Stay	Dessed Palace	Black Lagoon	Lake View	Classic	Radiant	Plaza
2001	65%	55%	70%	49%	71%	47%	59%
2000	43%	72%	76%	46%	64%	64%	63%
1999	63%	71%	65%	61%	58%	66%	65%
1998	72%	68%	60%	64%	61%	72%	49%
1997	81%	67%	64%	63%	59%	69%	45%

60. In which year did HCI witness the highest occupancy rate ?

(a) 2000 (b) 1999

(c) 1997 (d) 1998

61. Which one of the following statements is true?

(a) The lowest average occupancy rate was in the year 2000

(b) The average occupancy rate in 1997 was greater than that in the year 1998

(c) There is a gradual decrease in the average occupancy rate over the years

(d) The highest average occupancy rate was witnessed in 1997

62. Which of the following statement (s) is /are false?

(a) The average occupancy rate of Plaza was greater than that of Lake View

(b) The greatest average occupancy rate was witnessed in Pleasant Stay.

(C) The average occupancy rate for Dessert Palace is greater than that of Black Lagoon.

(d) All the above statements are false

63. In which year was the rate of growth in occupancy rate the highest ?

(a) 1997 (b) 1998

(C) 1999 (d) 2000

64. Every year HCI gives special awards to the managers of those hotels that had achieved the best and the second best occupancy rates. Which of the hotels has won this award at least twice?

(a) Pleasant Stay and Lake View

(b) Dessert Palace and Classic

(c) Black Lagoon and Radiant

(d) Lake view and Plaza

Directions (Qs. 65 to 69): Study the following table, showing monthly sales of cars of five types by five automobile shops to answer these questions.

Type	Automobile shops				
	P	Q	R	S	T
A	1250	3500	1360	2240	210
B	2100	3080	3700	4200	920
C	3460	4400	4860	4860	4760
D	900	680	700	1120	600
E	300	440	1200	1250	280

65. Which shop has the lowest sales of both type B and type E as compared to other shops ?

(a) P (b) Q

(c) R (d) T

66. Which shop has a share of 15% sales of the total type D sold by all the shops?:

(a) P (b) Q

(C) R (d) T

67. Which shop has the highest sale of cars of all the types ?

(a) P (b) Q

(C) R (d) None of these

68. Which shop sells cars of type B seven times to that of type E sold by it?

(a) Only P (b) Only Q

(c) Both P and Q (d) Only T

69. Among all the shops the lowest sale of type A is the highest sale of which of the following types ?

(a) B (b) C

(c) D (d) E

Directions (Qs. 70 to 72): Use the following table to answer these questions.

Speeds of a train over a 3-hour period								
Time period (in minutes)	0	30	45	60	90	120	150	180
Speed (in km/h)	64	72	76	80	88	96	104	112

70. How fast was the gain moving $2\frac{1}{2}$ hours after the timed period ?

(a) 88 km/h (b) 96 km/h

(c) 104 km/h (d) 112 km/h

71. During the 3 hours shown in the table, the speed of the train increased by :

(a) 75% (b) 100%

(C) 50% (d) 25%

72. At timet, measured in minutes, after the beginning of the time period which of the following gives the speed of the train in accordance with the table ?

(a) 1/6 t (b) 64 +1/6t

(C) 64 + t (d) None of these

Directions (Qs. 73 to 78): Study the table given below to answer these question.

Seasonwise Consumption of Fertilizers

(000 tonnes of nutrients)

Per cent share

Year	Kharif	Rabi	Total	Kharif	Rabi
1996-97	6920	7388	14308	48.4	51.6
1997-98	8092	8096	16188	50.0	50.0
1998-99	7834	8964	16798	46.6	53.4
1999-2000	9304	9841	19145	48.6	51.4

73. The consumption of fertilizers was almost equal during both the seasons in the year :

(a) 1996-97 (b) 1997-98

(C) 1998-99 (d) 1999-2000

74. Maximum consumption of fertilizers was during:

(a) 1998-99 (b) 1996-97

(d) 1999-2000 (d) 1997-98

75. The per cent share in the consumption of fertilizers during 1996-2000 was?
(a) Less for Kharif (b) less for Rabi
(c) Equal for both the seasons
(d) Inadequate data

76. The difference between the consumption of fertilizers in both the season is minimum during:
(a) 1996-97 (b) 1997-98
(c) 1999-2000 (d) 1998-99

77. Which season has shown consistent increase in the consumption of fertilizers over the period 1996-2000?
(a) Kharif (b) Rabi
(c) Both (d) None

78. The average total consumption per year over the period 1996-2000 works out to about :
(a) 16,600,000 tonnes
(b) 16,56,0,000 tonnes
(c) 16,69.0.000 tonnes
(d) None of these

Directions (Qs. 79 to 82) : These questions are to be answered on the basis of the following table giving the thermal and hydel generation over the period 1991 to 1095 in terms of KWH per kw of installed capacity

Year	Thermal	Hydel
1991	4000	4240
1992	4200	4010
1993	4020	4160
1994	4050	3700
1995	4040	3930

79. The ratio of thermal and hydel installed capacity over the period 1991-1995 is nearly
(a) 1 : 1 (b) 203 : 200
(c) 20 : 21 (d) 10 : 11

80. The average KWH generated per kW of installed capacity for Hyder power generation was approximately: -
(a) 4100 (b) 3820
(C) 4000 (d) 4050

81. If the total installed capacity in the Thermal Sector in 1992 was 89 x 109 kW, then how many kWH of energy was generated ?
(a) 3.74×10^{10} (b) 2.2×10^{8}
(c) 5.23×10^{10} (d) 3.74×10^{8}

82. The worst performance in terms of energy generation per kW of installed capacity was in:
(a) 1991 (b) 1992
(c) 1993 (d) 1994

Directions (Qs. 83 to 87) : Study the following table carefully to answer these questions.

The table given below shows a frequency distribution of the life-times of 400 radio tubes tested at L and M tube company.

Lifetime (hours)	Number of tubes
300-399	14
400-499	46
500-599	58
600-699	76
700-799	68
800-899	62
900-999	48
1000-1099	22
1100-1199	6
Total	**400**

83. The percentage of tubes, life times of which do not exceed 600 hours is.'
(a) 30.5% (b) 29.5%
(c) 29% (d) 30%

84. The percentage of tubes, life times of which are greater than or equal to 900 hours, is :
(a) 20% (b) 21%
(c) 79% (d) None of these

85. The percentage of tubes life times of which are at least 500 hours but less than 1000 hours, is:
(a) 78% (b) 80%
(c) 76% (d) 83.5%

86. The ratio of the tubes, life times of which are below. 600 hours to those above 800 hours, is:
(a) 69 : 59 (b) 59 : 69
(c) 59 : 60 (d) 50 : 69

87. What approximately is the percentage of tubes having the least life-time?

(a) 1.5% (b) 3.5%
(c) 5.5% (d) 11.5%

Directions (Qs. 88 to 92): The following table gives the enrolment in Higher Secondary Schools in 1978. Study the table carefully and answer these questions.

Enrolment	No. of schools
20-39	526
40-59	620
60-79	674
80-99	717
100-119	681
120-139	612
140-159	540
160-179	517
180-199	522
Total	**5439**

88. What is the approximate percentage of schools, where the enrolment was below 120?

(a) 59.16 (b) 59.27
(c) 60 (d) 61

89. What is the approximate percentage of schools, where the enrolment was above 79 but below 180 ?

(a) 56 (b) 56.39
(c) 57 (d) 55

90. Under which class, the maximum number of schools fall ?

(a) 100-119 (b) 80-99
(c) 60-79 (d) None of these

91. What is the approximate percentage of the least number of schools for the classes of enrolment?

(a) 8 (b) 9.5
(C) 9 (d) 10

92. What is the number of schools where the enrolment is above 99 but below 160 ?

(a) 2550 (b) 2033
(c) 1833 (d) 1316

Directions (Qs. 93 to 98) : Study the table given below carefully and answer the questions .

Water Supply Projections for Hyderabad

Year	Population to be covered (million)	Water requirements (mid)	Actual or projected supplies (ml)
1991	3.30	722	545
1994	4.35	913	680
2001	6:23	1105	1090
2011	8.19	1862	1906
2021	10.15	2224	1906

Mld : Million litres per day

93. What is the average growth rate per year of population to be covered from 2001 to 2011?

(a) 3.15% (b) 2.86%
(c) 4% (d) 2%

94. In which year was there maximum difference between water requirements and actual or projected supplies?

(a) 1994 (b) 2011
(c) 2021 (d) 1991

95. In which year the actual or projected supplies exceeded / exceeds the water requirements ?

(a) 2011 (b) 1994
(c) 2021 (d) None of these

96. What approximately is the maximum per capita of actual or projected supplies as litres/day ?

(a) 278.1 (b) 187.78
(c) 232.7 (d) 174.9

97. In which year, there was the least difference in per capita water requirements and the actual or projected supplies ?

(a) 2001 (b) 2011
(C) 1991 (d) 1994

98. In which year, there was the lowest per capita of water in actual or projected supplies?

(a) 2021 (b) 2001
(c) 1994 (d) 1991

Directions (Qs. 99 to 105) : Following six questions are on the basis of the following table which gives data yearwise and disciplinewise for candidates selected in an industry (in thousands).

Year / Discipline	1991	1992	1993	1994	1995	1996
Science	16	20	25	15	14	16
Arts	4	8	9	10	11	13
Commerce	8	12	12	11	15	13
Low	7	9	5	3	6	8
Computer Science	10	14	18	20	25	30
Others	1	1	2	1	1	1
Total	**46**	**64**	**71**	**60**	**72**	**81**

99. In which year for the first time, Computer Science discipline constituted more than 25% of the selected candidates?
(a) 1991 (b) 1992
(c) 1993 (d) 1994

100. Which discipline showed the greatest decline between 1992 and 1994 selections?
(a) Science
(b) Computer Science
(c) Arts (d) Law

101. In which year the percentage of Science discipline candidates was the highest?
(a) 1991 (b) 1992
(c) 1993 (d) 1994

102. Which discipline has shown the greatest rate of increase in its selection from 1994 to 1996?
(a) Arts
(b) Computer Science
(c) Law (d) Commerce

103. For which discipline the total recruitment for all the 6 years is closest to the total recruitment for any year?
(a) Arts
(b) Computer Science
(C) Law (d) Commerce

104. For which discipline there is no change between the candidates selected in 1991 and in 1996 ?
(a) Commerce (b) Science
(c) Law (d) Arts

Solution

1. (a) 63 + 18 + 21 : 15 + 5 +1.5

= 102 : 215

= 1020 : 215

= 204 : 43 $\approx$ 19 : 4

2. (b) 15 + 5 + 1.5 to 47 + 17 + 13 ie 21.5 to 67

$\therefore$ Growth of theaverge population of LMSs = 45.5

$$ie, \frac{45.5}{21.5} \times 100\%, ie 212\%$$

3. (d)

4. (c) Italy : 239%, UK : 213%, Canada : 240%

Switzwelns: 100%

5. (b) No. of applicatio who applied for 3100-10000

shares + 1666 $\times$ 6 = 9798

No, of applicants who applied for 10200-2100

$$\text{shares} = \frac{404 \times 5}{2} = 1010$$

No of applicants who applied for 25000 shares = 11

$\therefore$ Total number of applicants who applid for 3100-25000 shares = 9798 + 1010+ 11 = 10819

6. (c) Average number of shares allotted toan allottee

$$= \frac{\times 1515 + 200 \times 1633 + 300 \times 404 + 350 \times 11}{8001 + 7624 + 6202 + 1515 + 1633 + 404 + 11}$$

800100+762400+1240400+303300

$$= \frac{+326600 + 121200 + 3850}{25390}$$

$$= \frac{355750}{25390} = 140$$

7. (a) No of applicants who applied 1000-3000

$$shares = \frac{1515 \times 28}{3} = 505 \times 28 = 14140$$

No of applicants who applied for 10200-21000 shares

$$= \frac{404 \times 2}{2} = 1010$$

$$\therefore \text{Re}quired \quad ratio = \frac{14140}{1010} = 14$$

8. (a) Total subscription received

= (100+100+200+200+200+300+350) $\times$ 100 = 145000

$\therefore$ Oversubscuption =

(1,45000=1,00,000) = Rs 45,000

9. (d) Proportion in trhe total energy demand in Asia in 2005, 2010 and 2020:

Narutal Gas : 7.89%, 735%, 9.37%

10. (c)

11. (d) The demand in 2020 as a ratio of demand in 2005 in the Asian region for:

Natural gas = $\frac{4.5}{1.5} = 3$

solid fuiels = $\frac{5.5}{2} = 2.75$

Hydropower = $\frac{4.6}{1.5} = 3.06$

12. (c) Required proportion for :

Solid fuels = 25.69, 19.25

Hydropower = 6.71,5.31, 4.88

13. (d)

14. (d) For 20 years amount = 18000 $\times$ 20 $\times$ 12

= Rs.4320000

For 15 years, amount = 20600 $\times$ 15 $\times$ 12

= Rs.3708000

$\therefore$ Difference = 4320000 - 3708000

= Rs. 612000

15. (a) First amount = 12650 $\times$ 25 $\times$ 12

= Rs. 3795000

16. (a) Required amount=

$(13500 \times 200 \times 12)-12500 \times 20 \times 12)$

= 2400000

17. (a) First amount = 10300 $\times$ 15 $\times$ 12

Rs. 1854000

Second amount $19400 \times 10 \times 12$

= Rs.3228000

Dirrerence = 2328000 - 1854000

= Rs. 474000.

18. (b) Clearly news paper B has the highest number of circulation.

19. (b) Difference = (5392- 524) = 15.2 thousand

= 15200

20. (a) $x \times 97 = 227$

$$\therefore x = \frac{227}{97} = 2.34 \approx 2.35$$

21. (d) Required ratio = 44.9.3= 44 : 93 = 5.5 : 1.16

22. (b) Total number of new employees

= 126 + 131 = 257

23. (c) Required average

$$= \frac{5+9+74+8+...+4}{5} = \frac{100}{5} = 20$$

24. (a) Total new male employees

= 12 + 23 + 6 + 6 + 6 = 53

in 2002 by all companies

Total new male employees employed

in 2002 by companies B, C and D = 35 together

Required % = $\frac{35}{53} \times 100 = 66\%$

25. (b) Required ratio = 66 : 11 = 6 : 1

26. (c) Average value of six commodities

$= \frac{487}{6} = 81.17$ in 1999

average value of six commodities

$= \frac{451}{6} = 75.17$ in 2003

$\therefore$ Required average difference = -6

27. (a) Milk shows the greatest amount of change from 76 to 95

28. (d) Variation is sows by fruits.

29. (d) None of the above

30. (d) Amount paid in 15 years = 180 $\times$ 20600

= Rs. 3708000

Amount paid in 20 years = 240 $\times$ 18000

= Rs. 4320000

$\therefore$ Rs 612000 more will be paid

31. (b) Total amount repaid over 25 years

= 25 $\times$ 12 $\times$ 12650 = Rs.3795000

32. (b) Reduction in loan amount

= (13500 - 12500) $\times$ 20 $\times$ 12= Rs.240000

33. (b) Amount payable or 15 year on a loan of Rs. 1000000

= 15 $\times$ 12 $\times$ 10300 = 1854000

Amount payable for 10 years on a loan of Rs. 1500000

= 10 $\times$ 12 $\times$ 19400 = 2328000

Difference = (2328000 - 1854000)

= Rs.474000

34. (d) Numer of emergenies attended by 6 substations in the month of June and October was same and equal to 94

35. (a) Substation A showed the greater incease ie., 4 from 17 to 21

36. (b) Substation B attended the maximum number of complaints and is equal to 109.

37. (d) These two students who received 80 and September $\frac{211}{577} \times 100 = 36.56\%$

38. (b) Number of students who received 80 and above in Mathematics.

= (2 + 7 + 6 + 5 + 5 + 2 + 3) = 30

39. (c) Number of students securing 80% and more grade in physics and Mathematics

= (2 + 7) + (3 + 2) = 16

40. (b) Number of students securing 90% and more grade in physics and Mathematics = 5

41. (d) % of students securing less than 70% in both mathematics and physics

= (7 + 15 + 22) = 44

42. (a) Average annual sale of

LG = $\frac{186000}{5} = 37200$

Sony = $\frac{157500}{5} = 31500$

National Panasonic = $\frac{112000}{5} = 22400$

Toshiba = $\frac{78000}{5} = 15600$

43. (a) I. LG shows increase and decrease in sales during 5 years

II. samsung has recorded a fall in sales only twice

III. % increase in the number of n uites sold for sony (95-99) is highest

$= \frac{5000 - 12500}{12500} \times 100 = 300\%$

IV. The average annual sale of Samsung in less than that of sony.

44. (a)

Brand name	Least annual capacity utilisation	Highest annual capacity utilisation
Sony	$\frac{12500}{75000} \times 100$ = 16.67%	$\frac{50000}{75000} \times 100$ =66.67%
LG	40%	56%
Samsung	22.67%	44%
National	20%	40%
Toshiba	17.7%	24.83%

45. (b) Total sale of TV in 1999=148000

Total sale of TV in 2000

= 148000 × 1.25 = 185000

Sale of Toshiba in 1999 = 16000

Sale of Toshiba in 2000 = 16000 × 0.9

= 14400

Required % = $\frac{14400}{185000} \times 100 = 7.8\%$

46. (d) National Panasonic shoes a decrease of sale by 50%

$\frac{30000 - 15000}{30000} \times 100 = 50\%$

% decrease in 1996 = $\frac{30 - 25}{30} \times 100 = 16.6\%$

% decrease in 1997= $\frac{25 - 22}{25} \times 100 = 12\%$

% decrease in 1998 = $\frac{22 - 20}{22} \times 100 = 9.09\%$

% decrease in 1999 = $\frac{20 - 15}{20} \times 100 = 25\%$

Masimum % derease is shown during (1998-99)

Banks	Years					Total
	1990	1991	1992	1993	1994	
A	18	23	45	30	70	186
B	27	33	18	41	37	156
C	29	29	22	17	11	108
D	31	16	28	32	43	150
E	13	19	27	34	42	135
Total	**118**	**120**	**140**	**154**	**203**	**735**

47. (a) Average distribution of loan during the year = $\frac{735}{5} = 147$ crore

Clearly in 1990 it was least 118 as compared to average 147

48. (c) % increase $\frac{154 - 140}{140} \times 100 = 10\%$

49. (d) In on year it happened so.

50. (b) Total loan disbursed in the year 1991=120 crore

Therefore target for each bank

= 120 × 20% = 24 crore. It is clear that only banks B and C reached the target.

51. (a) Total loan disbursed in 1994 = 203 crore
Loan disbursed by bank A = 70 crore

$$\therefore \quad \% = \frac{70}{203} \times 100 = 34.45\%$$

52. (a) Required $\% = \frac{85}{118} \times 100 = 72\%$
(approximately)

53. (c) Cost of purchasing x gm of food A, y gm of food B and Z gm of food C

$$= \frac{1.80}{100}x + \frac{3}{100}y + \frac{2.75}{100}z$$

$$= \frac{0.9}{50}x + \frac{0.3}{10}y + \frac{0.11}{4}z$$

54. (d) Proptein in 500 g of A= 50 × 10%=50
250 g of B - 250 × 20% = 70
200 g of B and 200 g of C
= 200 × 20% +200 × 20% = 80

55. (a) The cost of 300 g of

$$A = \frac{1.8}{100} \times 300 = 5.40$$

The cost of 200 g of A ad 100 g of C

$$= \frac{2.75}{100} \times 200 = 5.5$$

The cost of 150 g oc A and 100 g of C

$$= \frac{1.8}{100} \times 150 + \frac{3}{100} \times 100 = 5.7$$

500 g of B and 100 g of A

$$= \frac{3}{100} \times 500 + \frac{1.8}{100} \times 100 = 16.8$$

The cost of 300 gm of A is least.

56. (a) Maximum reduction on per capita consumption is shown by USSR

USSR	95kg
Itlay	75 kg
Japan	58 kg
India	7 kg

57. (b) Prduction in USSR = 123.01 million tonnes Clearly the production of Japan alone is 87.80 million tonnes. If it combines any other three conutries ot will increase 123.01 million tonnes hence Japan is our answer.

58. (d) reduction in per capita consumption

USSR $\frac{483-388}{483} \times 100 = 19\%$

Italy $\frac{656-582}{506} \times 100 = 11\%$

France $\frac{506-447}{506} \times 100 = 11\%$

India $\frac{32-25}{32} \times 100 = 21\%$

59. (b) West Germany had approximately 15 times more per capita cement consumption than that in India

$$= \frac{520}{32} = 16.25$$

60. (b) Total occupancy for the year 1999 is the highest 2001=416, 2000 = 428,
1999 = 449, 1998 = 446, 1997 = 448

61. (b) From the above data it is clear that total occupancy for the year 1997 is greater than the of 1998 hence corresponding average will also be grater.

62. (d) Average occupancy rate hotel wise is given below

Pleasant stay	324 / 5 = 64.8
Dessert palace	333 / 5 = 66.6
Black lagoon	335 / 5 = 67
Lake view	283 / 5 = 56.6
Classic	313 / 5 = 62.6
Radiant	318 / 5 = 63.6
Plaza	281 / 5 = 56.2

From the above table it is given that all the statements given ate false.

63. (c) Occupancy rate has shown a growth only in the year 1999.

64. (c) From the table it is clear that hotel blue lagoon and Radiant registered the highest and second highest occupancy rate at least twice.

65. (d) Shop T shows the lowest sales of both B type (920) and E type (280) cars.

66. (d) Total of type D cars sold by all the shops

= 4000 15% of 4000 = 600. Hence shop T has a share of 15%

67. (d) Sales of all the shop of all the type of cars is given below.

Shop	Total
P	8010
Q	12100
R	11820
S	13670
T	8660

68. (c) From the data table is is clear that shop P and Q register seven times sales of car type B of type E.

69. (b) For type A lowest sale is shown by shop T ad this shop refisterd the maxium sale of type C (4760)

70. (c) From the given table after a time period of $2\frac{1}{2}h, ie$

150 minutes the speed is 104 km/h.

71. (a) %increase in the speed

$$= = \frac{112-64}{64} \times 100 = \frac{48}{64} \times 100 = 75\%$$

72. (d) None of these

73. (b) For (1997-98) it is same for both season kharif and Rabi.

74. (c) It is maximum for the year 1999-2000

75. (a) Consumption for Kharif = 6920

Consumption for Rabi = 7388

Hence it is less for Kharif.

76. (b) It is minimum for the year 1997-98 - 8096-8092 = 4 thousand tonnes.

77. (b) It is shown by Rabi

78. (a) Average total consumption

$$= \frac{14308+16188+16798+19145}{4}$$

$$= \frac{66439}{4} = 16609.75$$ tone of app.

16600000 tonnes

79. (b) Required ratio=20310 : 20040 = 203 : 200

80. (c) Required average

$$= \frac{4240+4010+4160+3700+3930}{5}$$

$$= \frac{20040}{5} = 4008 \approx 4000$$

81. (a) Energy generated

$= 4200 \times 89 \times 10^5 kw = 3738 \times 10^7$

$= 3.74 \times 10^{10}$

82. (d) Total energy generated for Thermal and Hydel is given yearwise as below.

	Themral + Hydel
1991	8240
1992	8210
1993	8180
1994	7750
1995	7970

83. (b) Required %

$$= \frac{14+46+58}{400} \times 100 = \frac{118}{400} \times 100 = 29.5\%$$

84. (d) Required %

$$= \frac{48+22+6}{400} \times 100 = \frac{76}{400} \times 100 = 19\%$$

85. (a) Required %

$$= \frac{58+76+68+62+48}{400} \times 100$$

$$= \frac{312}{400} \times 100 = 78\%$$

86. (b) Required ratio

$$= \frac{14+46+58}{62+48+22+6} = \frac{118}{138} = \frac{59}{69}$$

87. (b) Required % $= \frac{14}{400} \times 100 = 3.5\%$

88. (a) Required %

$$= \frac{526 + 620 + 674 + 717 + 681}{5439} \times 100$$

$$= \frac{3218}{5439} \times 100 = 59.16\%$$

89 (b) Required %

$$= \frac{717 + 681 + 612 + 540 + 517}{5439} \times 100$$

$$= \frac{3067}{5439} \times 100 = 56.39\%$$

90. (b) Maximum numberofschoolis 717 and it falls in the class 80-99.

91. (b) Least number of school is 517. Hence required % is

$$= \frac{517}{5439} \times 100 = 9.5\%$$

92. (c) Required number of schools

= 681 + 612 + 540 = 1833

93. (a) Average growth rate per year of population to be covered

from 2001 to 2011

$$= \frac{8.19 - 6.23}{6.23} \times \frac{100}{10} = 3.15\%$$

94. (c) Difference between water requirement and actual projected supplies year wise is as follows:

Year	Difference
1991	177
2011	-44
2021	318
1994	233

Difference is maxumum for the year 2021.

95. (a) For the year 2011 actual or projected supplies exceed the water requirement

96. (c) Actual supplies as litres/day per capita year wise

1991	545/ 3.3	165
1994	680/ 4.35	156
2001	1090/ 6.23	174
2011	1906 / 8.19	232
2021	1906/ 10.15	187

Clear maximum supplies is for the year 2011 ie, 232.

97. (b) Difference is least for the year 2011

98. (c) From the question 95 lowest supplies is in the year 1994.

99. (c) Required % in the year

$$1991 = \frac{10}{46} \times 100 = 21.73\%$$

In $1992 = \frac{14}{64} \times 100 = 21.8\%$

$$1993 = \frac{18}{71} \times 100 = 25.35\%$$

$$1994 = \frac{20}{60} \times 100 = 33.33\%$$

It now clear that required percentage is more for the year 1993 and 1994 but it happened so for the first time in 1993.

Hence this is thecorrect answer.

100. (d) Greaterdecline is for

Law discipline $= \frac{9-3}{9} \times 100 = 66\%$

101. (c) Required % year wise given in the following table

Year	%
1991	34.7
1992	31.2
1993	35.2
1994	24

It is highest for the year 1993

102. (c) Greatest rate of increase has been witnessed (between 1994 to 1995)

by the law discipline

$$= \frac{8-3}{3} \times 100 = \frac{500}{3} = 166.67\%$$

103. (c) Total recruitment for all the year discipline wise is given below:

Arts= (4 + 8 + 9 + 10 + 11 + 13) = 55

Computer Science

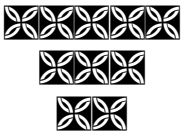
= (10 + 14 + 18 + 20 + 25 + 30) = 117

Low = (7 + 9 + 5 + 3 + 6 + 8) = 38

Commerce=(8 + 12 + 12 + 11 + 15 + 13) = 71

Total recruitment for commerce is equal to total selection in the year 1993.

104. (b) For science and others there is no change. But option of others is not available in our option hence option. (b) is our answer.



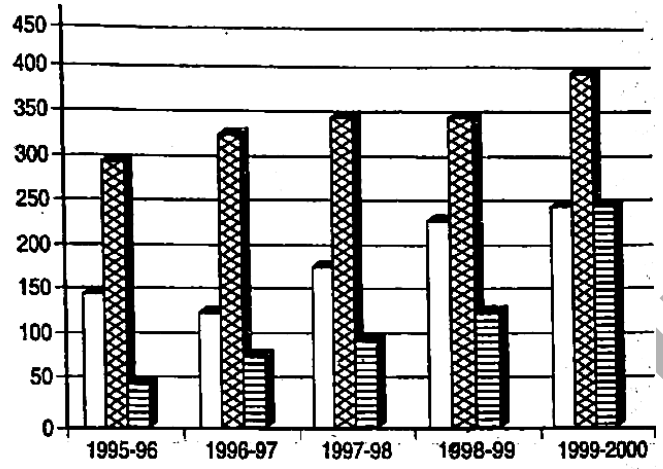
Unit-2- Bar Chartes

Directions (Qs. 1 to 4): The graph below gives the data of the number of employees working in a Company the total expenditure of the Company, and the total salary paid to the employees by the Company over the years. Study the graph carefully to answer these questions.

No. of Employees of the company

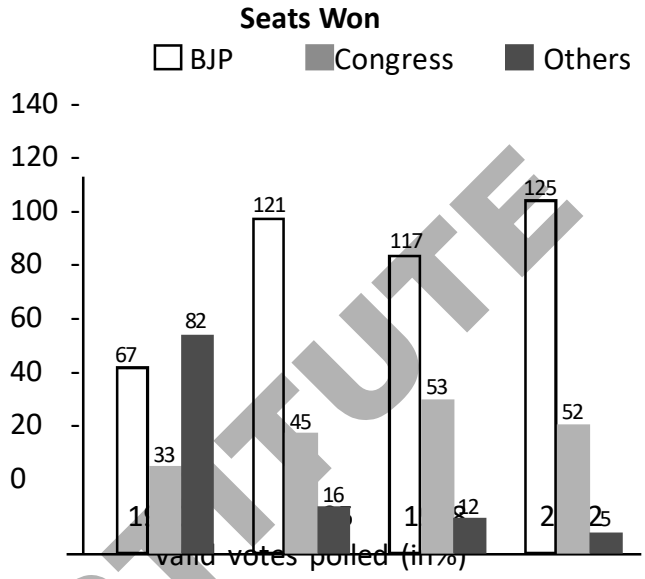
Total Expenditure of the company (in Rs Lakh)

Total salary paid to the Employees by the company (in Rs '0000)

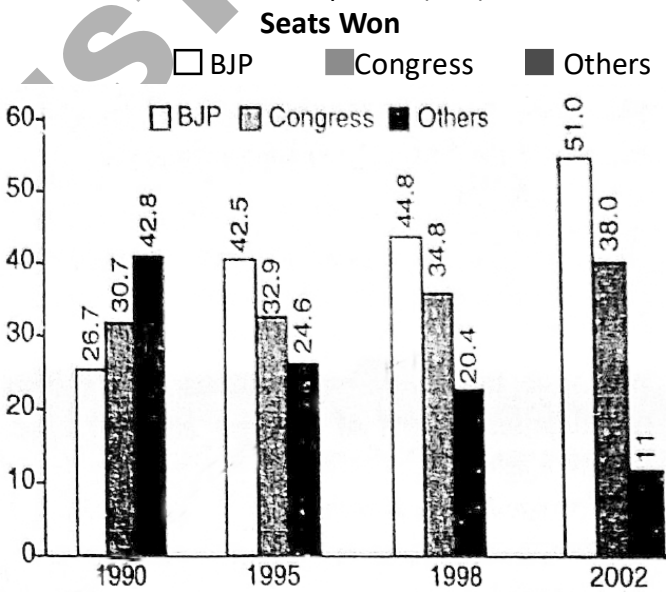


1. What was the percentage increase in the number of employees of the Company from 1995-96 to 1997-98 ?
   (a) 21.33% (b) 25%
   (c) 33.33% (d) 16.67%
2. What was the average number of employees who worked in the Company over the given years?
   (a) 185 (b) 195
   (c) 235 (d) 175
3. What was the difference between the average of the total salaries paid by the Company over the given years and the total salary paid by the Company in the year 1997-98 ?
   (a) Rs 2,00,000 (b) Rs 2,50,000
   (c) Rs 4,00,000 (d) Rs 1,50,000
4. The total expenditure of the company in 1995-96 was approximately what percent of the average of the total expenditures of the Company over the given years ?
   (a) 82% (b) 79%
   (c) 76% (d) 87%

Directions (Qs. 5 to 9): Study the graphs which show the seats won the percentage of valid votes polled for differents political in Gujarat over the year.



Valid votes polled (in%)



5. If the total number of valid votes in 2002 Gujarat election was 5 crore then find, the average number of votes for winning one seat for other political parties :
   (a) 11 lakh (b) 1.10 lakh
   (c) 1.10 crore
   (d) Data is inadequate
6. In which of the following years was the number of seats won by BJP maximum with respect to the previous given year?
   (a) 1998 (b) 1995
   (c) 2002 (d) 1995 and 2002
7. In 1998, if 2.24 crore people votes were valid for BJP whereas in 1990 there were 1.228 Crore people votes valid for Congress by what percent was the number of valid votes less in 1990 with respect to that in 1998?

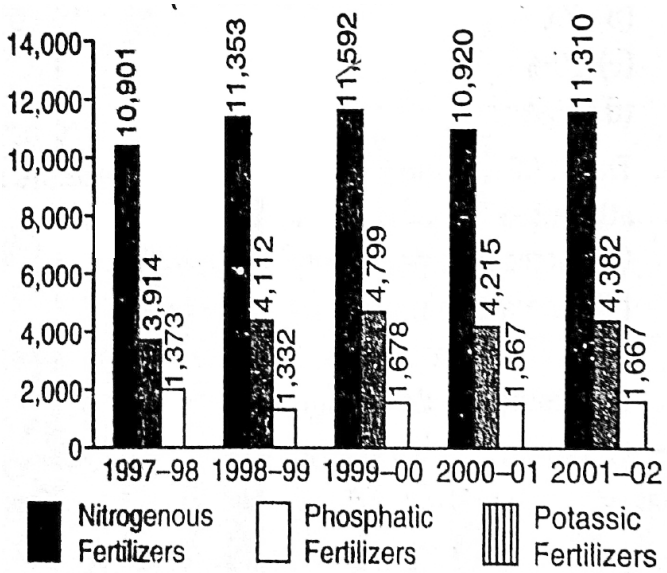
(a) 20% (b) 24%
(C) 30% (d) 25%

8. In which of the following years did the BJP secure more than $66\frac{2}{3}$ % of the total seats?
(a) 1990 (b) 1998
(c) 1995 (d) 2002

9. In which of the following years, was the difference in the number of valid votes for any two political parties maximum?
(a) 1990 (b) 1998
(c) 1995
(d) Cannot be determined

Directions (Qs. 10 to 11) : The following bar chart shows the consumption of fertilizers in nutrient terms. Examine the following graph to answer these questions :

Consumption of Fertilizers In Nuterient Terms ('000 tonnes of nutrients)

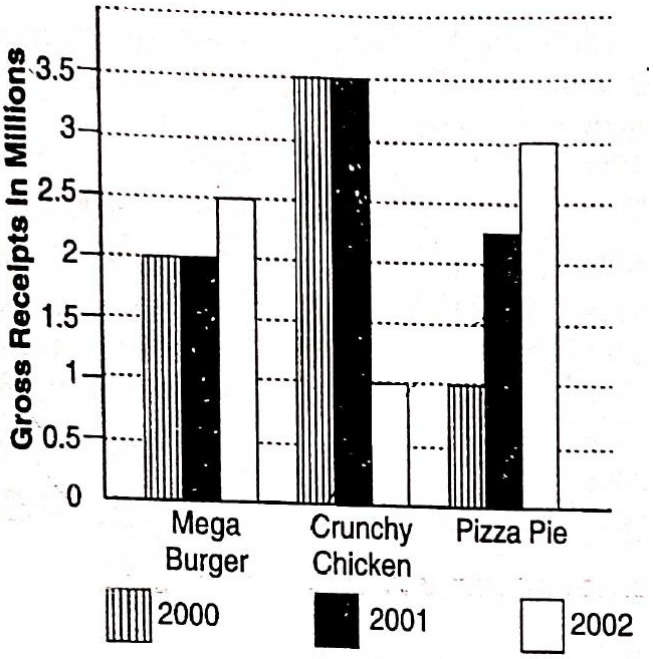


10. Total consumption of Nitrogénous Fertilizers, Phosphatic Fertilizers and Potassic Fertilizers during the period 1997-2002 has been in the ratio
(a) 10:28 : 74 (b) 37: 14:5
(c) 5:2:1
(d) None of the above

11. Which of the following fertilizers has shown a consumption pattern of increase and decrease in alternate years ?
(a) Nitrogenous Fertilizers
(b) Phosphatic Fertilizers
(c) Potassic Fertilizers
(d) No such trend is discernable

Directions (Qs. 12 to 14) : Examine the graph to answer these questions.

Gross Receipts (Rs.) Fast Food Restaurants 2000-2002

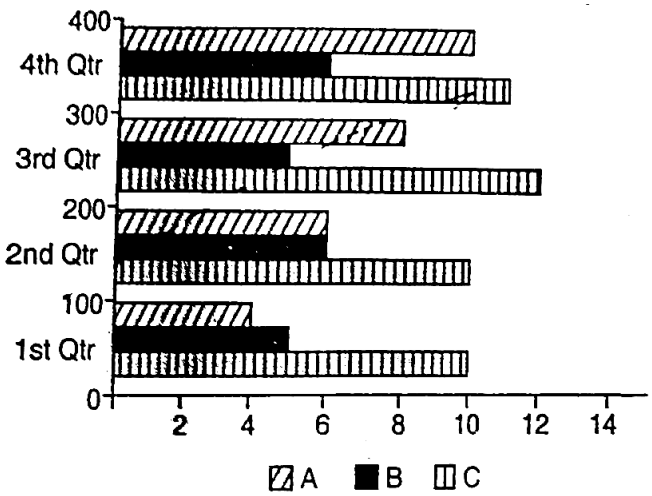


12. The 2000-2002 gross receipts for Mega Burger exceeded those of Pizza Pie by approximately Rs.
(a) 2 million (b) 0.2 million
(C) 8.2 million (d) 8.4 million

13. The percent increase in receipts for Pizza Pie exceeded the percent increase of Mega Burger by approximately how much in the given period?
(a) 20% (b) 0%
(c) 10% (d) 15%

14. The 2002 decline in Crunchy Chicken receipts may be attributed to :
(a) increase in popularity of pizzas
(b) increase in popularity of burgers
(c) decrease in demand for chicken
(d) Cannot be determined

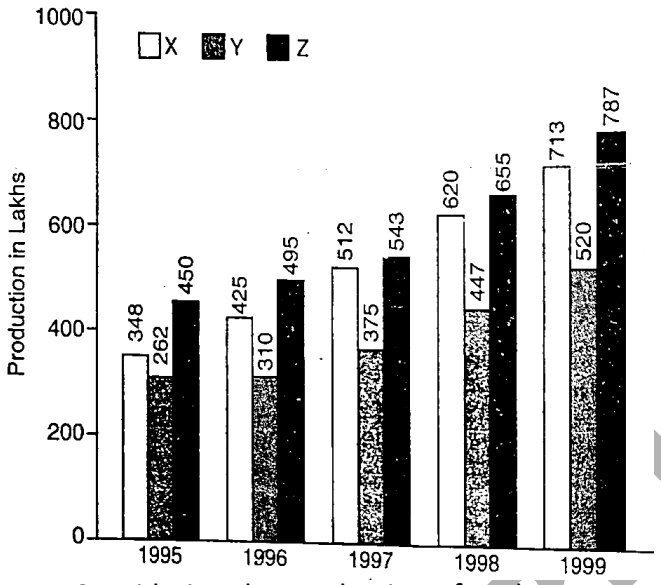
Directions (Qs. 15 to 16): In answering these questions, you have to use the revenue data for the three companies A, B and C provided in the Groph:



15. Which quarter has the highest average revenue?
(a) First (b) Second
(c) Third (d) Fourth

16. What is the total revenue for all the companies in all : the quarters?
(a) 89 (b) 90
(c) 91 (d) 93

Directions (Qs. 17 to 21) : The following bar chart gives the production of cycles by three different companies X, Y and Z for different years. Study this chart to answer these questions.



17. Considering the production of each company separately, in how many instances, is the percentage increase in the production of cycles over the previous year's production greater than 20% ?
(a) 4 (b) 6
(c) 5 (d) 7

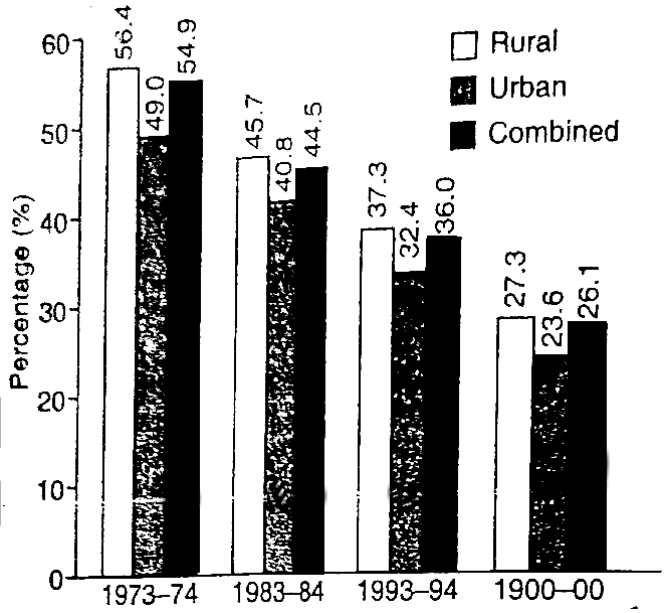
18. The annual percentage increase in the total production of cycles from 1995 to 1999 was :
(a) 24.08% (b) 23.12%
(c) 22.64% (d) None of these

19. In 1996, 15% of the rural population and 8% of the urban population used cycles as their mode of transportation. If the total population in 1996 is 1.1. billion, then what is the rural population in millions? (Assume that one cycle is used by a single Person).
(a) 600 (b) 0.6
(c) 500 (d) 0.5

20. If the ratio of the average cost to the customer of each cycle of the companies X, Y and Z is 2:4:3, then when is the percentage increase in the total revenue of the cycles produced in 1997 to 1999. (Assume that the cost of the cycle remained the same)
(a) 39.89% (b) 40.53%
(c) 42.64% (d) None of these

21. Over the five-year period, the percentage increase in production was maximum for :
(a) X (b) Y
(c) Z
(d) Cannot be determined

Directions (Qs. 22 to 24): The bor graph pertains to the estimates of incidence of poverty in India, given as %ge. The toba following the graph gives the population of India durin 1971-2001 os per census.



Population	All India
1971	548160
1981	684329
1991	846302
2001	1027015

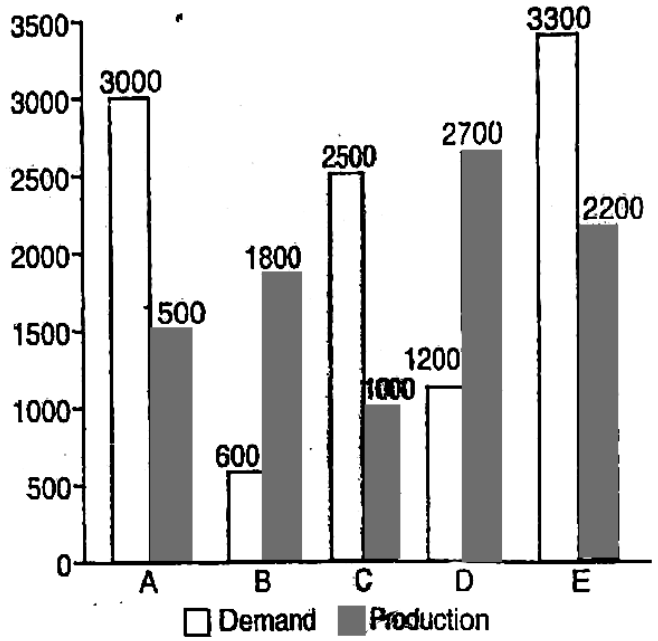
(In thousands)

22. The total number of the poor in 2000 is approximately :
(a) 268 millions (b) 278 millions
(c) 242 millions (d) 300 millions

23. "The total number of the people below poverty line has been consistently declining during 1971-2001." This statements is :
(a) correct (b) incorrect
(c) partially correct
(d) inadequate data

24. From the given data, it can be inferred that :
(a) rural poverty ratio is constantly declining
(b) urban poverty ratio has been consistently falling
(c) combined ratio has been decreasing
(d) all of the above

Directions (Qs. 25 to 29) : These questions are based on the graph which shows the Demand and Production statistics of the five companies.



25. What is the ratio of companies having more demand than production to those having more production than demand ?
(a) 2:3 (b) 4:1
(c) 2:2 (d) 3:2

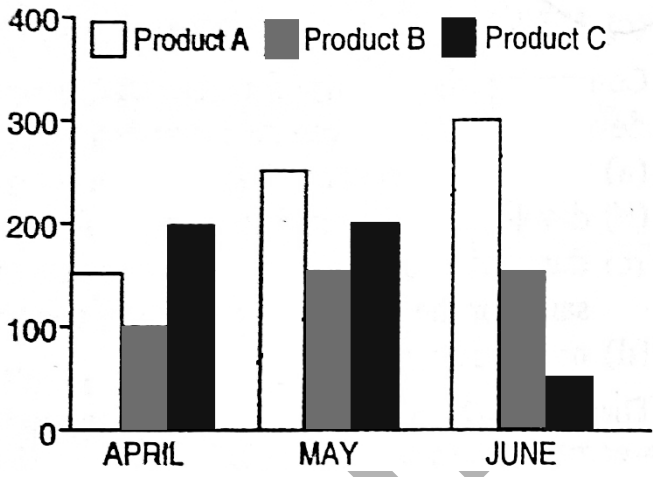
26. What is the difference between the average demand and the average production of five companies taken together?
(a) 1400 (b) 400
(C) 280 (d) 138

27. The production of the Company D is how many times of the production of the Company A?
(a) 1.8 (b) 1.5
(C) 2.5 (d) 1.11

28. The demand of Company B is what percent of the demand of Company C?
(a) 4 (b) 24
(c) 20 (d) 60

29. If Company A desires to meet the demand by procuring TV sets from a single company, then which one of the following can meet the need adequately?
(a) B (b) C
(c) D (d) None

Directions (Qs. 30 to 33): Answer these questions on the basis of the following graph which shows the production of items A, B and C during the months April, May and june.



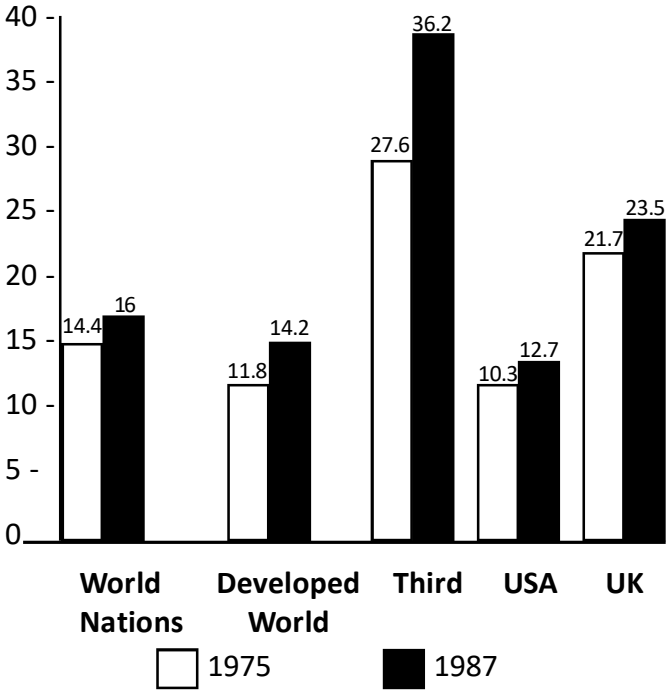
30. The percentage increase of production of item A.from April to May is
(a) 33% (b) 66%
(c) 74% (d) 25%

31. Which item has maintained a rise over the three months ?
(a) A (b) B
(c) C (d) B and C

32. The overall production of items A, B and C during April and May is in the ratio
(a) 1 : 1 (b) 3 : 4 : 5
(c) 9 : 11 (d) 11 : 9

33. The total production during the months of April, May and Jure of the three items A, B and C are in the ratio
(a) 7 : 5 : 7 (b) 7 : 4 : 4.5
(c) 7 : 4.5 : 4 (d) 4.5 : 6 : 5

Directions (Qs. 34 to 37): The Following bar graph depicts the annual rates of Inflation in precentages for 1975 and 1987.



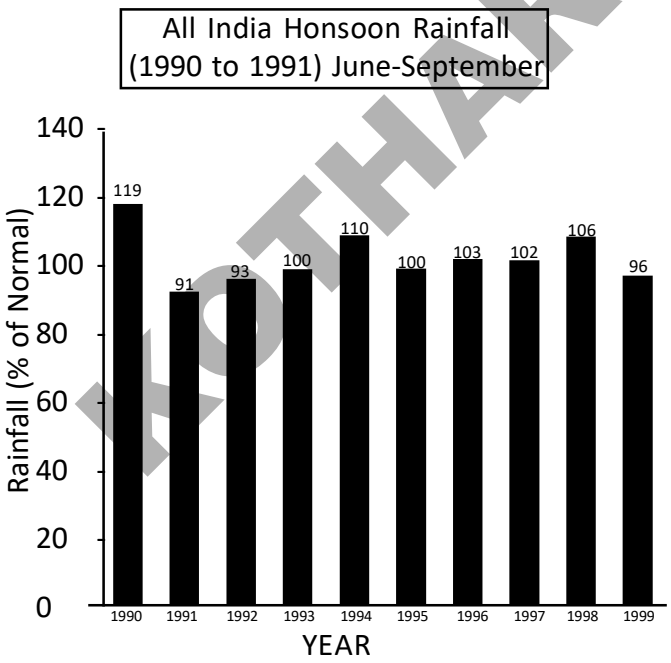
34. From 1975 to 1987, inflation rate increased in the third world countries approximately by :
(a) 10% (b) 20%
(c) 30% (d) 35%

35. In the year 1975, the lowest rate of inflation was in the
(a) Developed Nations
(b) UK
(C) USA (d) Third World

36. In the year 1987, the inflation rate in the third world countries vis-a-vis the whole world jumped approximately by :
(a) 50% (b) 100%
(c) 125% (d) 200%

37. Comparing the figures for the USA vis-a-vis the developed nations, it can be concluded that :
(a) USA had better control on inflation.
(b) developed nations had better control on inflation,
(c) the control on inflation rate continues to be the same for the USA and for the developed nations.
(d) no conclusion can be drawn.

Directions (Qs.38 to 41) : Study the bar-chart of All India mansoon Rainfall given below to answer these questions.



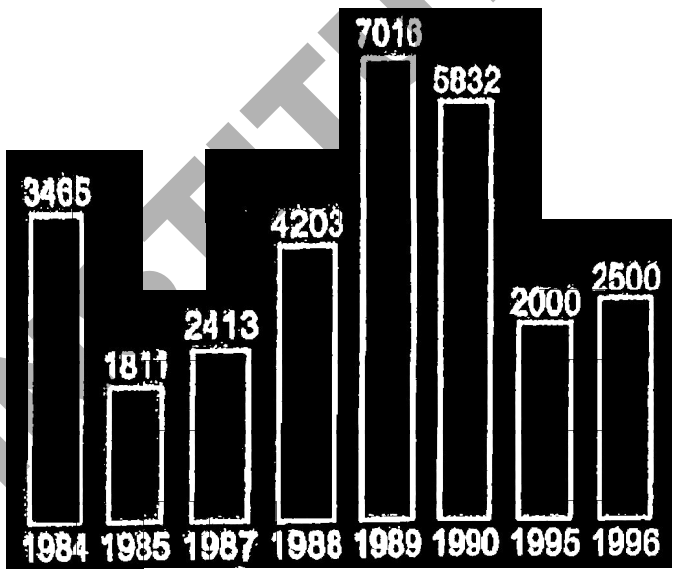
38. The normal rainfall duridg the period 1990-1999 was experienced in the year (s):
(a) 1994 (b) 1994 and 1995
(c) 1996 and 1997 (d) 1990

39. The year ..... witnessed the least rainfall,
(a) 1991 (b) 1999
(c) 1992 (d) 1993

40. Out of the 10 years, how many years had above normal rainfall ?
(a) 3 (b) 7
(c) 5 (d) 6

41. Maximum flood damage has been during the year :
(a) 1990 (b) 1994
(c) 1999 (d) Inadequate data

Directions (Qs. 42 to 47) : These questions are to be answered on the basis of the bar-chart given below, giving the wheat imports (in thousand tonnes) for years 1984 to 1996.



42. In which year did the imports register the highest increase over its preceding years ?
(a) 1996 (b) 1989
(c) 1988 (d) 1987

43. The imports in 1990 were approximately how many times to that of 1985 ?
(a) 3.22 (b) 2.41
(c) 1.68 (d) 0.31

44. What is the ratio of the years which have above average imports to those which have below average imports?
(a) 3 : 8 (b) 8 : 3
(c) 3 : 5 (d) 5 : 3

45. The increase in imports in 1996 was what per cent of the imports in 1995 ?
(a) 80 (b) 125
(c) 5 (d) 25

46. The imports in 1988 are approximately what percent of the average imports for the given years ?
(a) 65 (b) 85
(c) 190 (d) 115

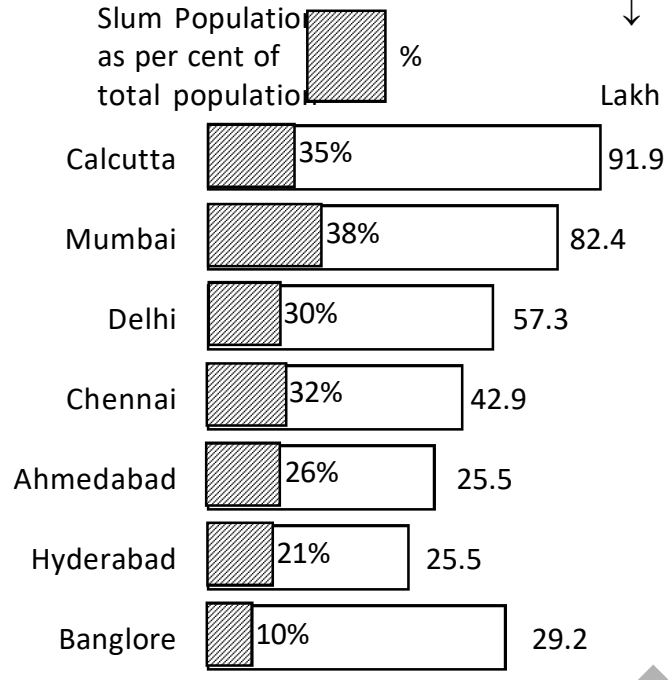
47. For which year is the amount of wheat imported closest to the average of imports

over the entire period ?

(a) 1987 (b) 1995
(c) 1984 (d) 1996

Directions (Qs. 48 to 55): Study the following chart to answer these questions (Dec. 2000)

Slum Population in Metropolis : 1991



48. The total slum population of Calcutta in 1991 was approximately :
(a) 30 lakh (b) 31 lakh
(c) 32 lakh (d) 33 lakh

49. The difference in the slum populations of Bangalore and Hyderabad was:
(a) 4.1 lakh (b) 3.71 lakh
(C) 2.43 lakh (d) 2 lakh

50. The city with the highest slum population was:
(a) Mumbai (b) Calcutta
(c) Delhi (d) Chennai

51. Two cities with nearly equal slum population were :
(a) Ahmedabad and Hyderabad
(b) Delhi and Chennai
(c) Hyderabad and Banglore
(d) Mumbai and Calcutta

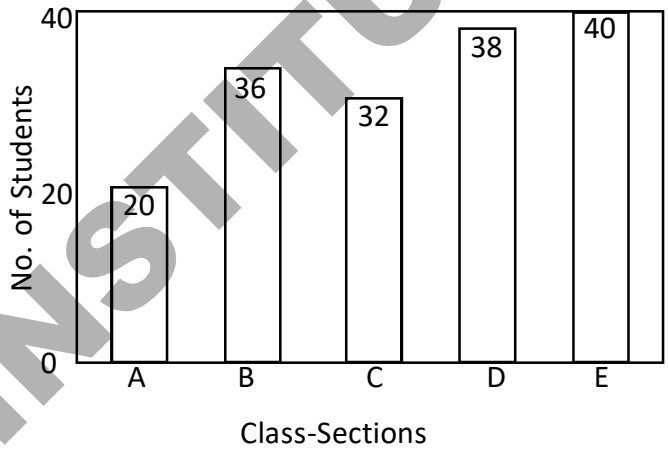
52. The slum population of Delhi was more than 3 times the slum population of:
(a) Hyderabad (b) Ahmedabad
(c) Banglore (d) Chennai

53. The slum population of all the seven cities nearly equalled the total population of:
(a) Calcutta and Banglore
(b) Delhi and Chennai
(c) Delhi and Hyderabad
(d) Mumbai and Ahmedabad

54. The ratio of slum population to total population in Calcutta is .....times the same ratio in Banglore.
(a) 3 (b) 3.5
(c) 4 (d) 5

55. In terms of slum population, the second city with the least population was :
(a) Delhi (b) Banglore
(C) Ahmedabad (d) Hyderabad

Directions (Qs. 56 to 59): These four questions are to be answered on the basis of the following bar-graph, showing the number of students in five sections A to E of a class in a school. [Jan. 1999)



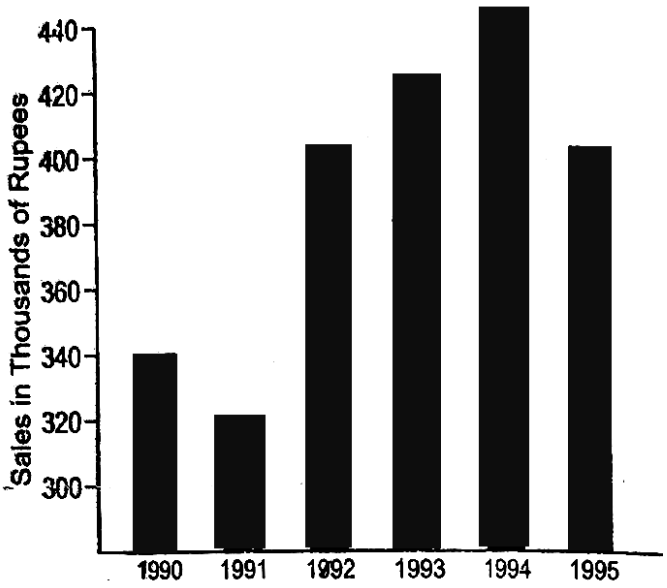
56. Which section has the largest number of studen
(a) E (b) D
(c) B (d) C

57. Which section has twice the number of students as compared to another sections ?
(a) A (b) C
(C) D (d) E

58. If the students were to be uniformly divided in ench section, for which section would the strength change most drastically ?
(a) A (b) B
(c) D (d) E

59. What is the number of students that have to be moved from one section to another so that there are three sections with exactly the same number of students ?
(a) 1 (b) 2
(c) 3 (d) 4

Directions (Qs. 60 to 66) : The following 7 question are to be answered on the basis of the sales turnover bar-chart for the years 1990 to 1995 given below :



60. By what amount are the sales in 1993 more than those in 1991 ?
    (a) Rs. one hundred
    (b) Rs, ten thousand
    (c) Rs one lakhí
    (d) Rs. ten lakh

61. The sales in 1991 are how many times to those of 1992 ?
    (a) 8 times (b) 0.8 times
    (c) 2.5 times (d) 3 times

62. In which year did the sales show the least per cent increase to that of the preceding year ?
    (a) 1990 (b) 1992
    (C) 1993 (d) 1994

63. The sales in 1994 are what per cent of those in 1994?
    (a) 40 (b) 4
    (c) 110 (d) 1.1

64. What is the appropriate average sales (in thousands for the years 1992 to 1995?
    (a) 420 (b) 415
    (c) 430 (d) 425

65. For which of the earlier years, was the sales turnover the same as for the year 1995?
    (a) 1991 (b) 1992
    (c) 1993 (d) 1994

66. For which previous year, the turnover was 80% of the turnover for the year 1995 ?
    (a) 1991 (b) 1992
    (C) 1993 (d) 1994

Solution

1. (d) Required percent increase

$$=\frac{25}{150}\times 100=\frac{100}{6}=16\frac{2}{3}\%$$

2. (a) Required average number of employees

$$=\frac{150+125+175+225+250}{5}=\frac{925}{5}=185$$

3. (a) Required difference in Rs. 10000

$$=\frac{50+75+100+125+250}{5}-100$$

= 120 - 100 = 20

ie, Rs. 2,00,000

4. (d) Required percent

$$\frac{300}{\frac{300+325+350+350+400}{5}}\times 100$$

$$=\frac{300}{345}\times 100=86\frac{22}{23}\%\approx 87\%$$

5. (d)

6. (b) Required no of seats for BJP in 1995 = 121 - 67 = 54

7. (a) Number of valid votes in 1990

$$=\frac{1.228\times 100}{20.7}=4 \text{ crore}$$

Bumber of valid votes in 1998

$$=\frac{224\times 100}{44.8}=5 \text{ crore}$$

Required % $=\frac{5-4}{5}\times 100=20\%$

8. (b)

9. (b)

10. (d) Total consumption of Niteogenous fertilixers

= (10901 + 11354 + 11592 + 10920+ 11310) = 56077

Total consumption of Phosphatic fertilizers

= (3914 + 4112 + 4799 + 4215 + 4382) = 21422

Total consumption of Potassic fertilizers

= (1373 + 1332 + 1678 + 1567 + 1667) = 7617

11. (d) No such trend is exihibited by any type of fertilizers.

12. (a) Gross receipts for Mega Bueger

= (2.5 + 2.5 + 3.4) million = 8.4 million

Gross receips for pizza pie

= (1 + 2.2 + 3) million = 6.2million

Difference = (8.4 - 6.2) million

= 2.2 million

13. (d) Required % $=\frac{3.4-3}{3}\times 100=15\%$ (approx)

14. (d)

15. (d) From the graph it is clear that revenue collection for the IVth quarter is maximum

16. (d) Total revenue for all the companies in all the quarter

= 19 + 22 + 25 + 27 = 93

17. (b) For company x

In the year 1996 = 22.12%, 1997

= 20.47%, 1998 = 21.09%

For company y

In the year 1997 = 20.96%

For company z

In the year 1998 = 20.62%

In the year 1999 = 20.15%

In the in 6 years % increase in the production of cycle over the previous year's Production greater than 20%

18. (c) Annual % increase from 1995 to

$$1996 = \frac{1}{4}\left(\frac{960}{1060} \times 100\right) = \frac{90.56}{4}$$

19. (c) Population in 1996 = 1.1 billion = 1100000000 million

Production of cycles in

1996 = 1230 lakh = 123000000

Let the rural population be x, then urban population = (1100000000 - x)

Now given 15% of x + 8% of (1100000000 - x) = 123000000

$\Rightarrow$ x = 500000000 = 500 million

20. (d) Number of cycles produced in 1997

x = company = 512 lakh

Y = Company = 375 lakh

Z = company = 543 lakh

Number of cycles produced in 1999

x = company = 713 lakh

Y = Company = 520 lakh

Z = company = 787 lakh

Let the cost if X, Y and Z company be Rs. 4K and Rs 3K respectively.

Then total revenue collected in 1997

$= 512 \times 2k + 375 \times 4k + 543 \times 3k$

$= \frac{1}{3} \times 302.4$

Total revenue collected in 1999

$= 713 \times 2k + 520 \times 4k + 787 \times 3k$

$= 5867k$

$\therefore$ % increase in revenue from 1997 to 1999.

$= \frac{1714k}{4152k} \times 100 = 41.27$

21. (a)

22. (a) Total population = 1027015

Combined % of poor = 26.1%

$\therefore$ Required % = 1027015 $\times$ 26.1%

= 268 million

23. (b) Number of poors in

73- 74 = 548160 $\times$ 54.9% = 300.9 million

Number of poors in

83- 84 = 684329 $\times$ 44.5% = 304.5 million

Number of poors in

93 - 94 = 846302 $\times$ 36% = 304.5 million

Number of poors in

2000-2001=1027015 $\times$ 26.1%=268 million

Hence thestatement is not correct.

24. (d) All the statements are correct.

25. (d) Three companies A, C and E have more demand. Companies B and D have more production. Hence required ratio = 3 : 2

26. (c) Average demand

$$= \frac{300 + 600 + 2500 + 1200 + 3300}{5}$$

$$= \frac{10600}{5} = 2120$$

Average production

$$= \frac{150 + 1800 + 1000 + 2700 + 2200}{5}$$

$$= \frac{9200}{5} = 1840$$

$\therefore$ Required difference = 2120-1840

= 280

27. (a) Let the Production of company D is x times of production of company A.

$$x = \frac{2700}{1500} = \frac{9}{5} = 1.8$$

28. (b) Required % $= \frac{60000}{2500} = 24$

29. (d) Maximum production = 2700, whereas demand of company A = 3000

30. (b) % increase from April to May

$$= \frac{250 - 150}{150} \times 100 = 66\%$$

31. (a) Clearly Product A has maintained a rise over the three months.

32. (b) Total production in Aprial

= 150 + 100 + 200 = 450

Total production in May

= 250 + 150 + 200 = 600

$\therefore$ Ratio = 450 : 600 = 3: 4

33. (b) Total production of item A in 3 months

= 150 + 250 + 300 = 700

Total production of item B in 3 months

= 100 + 150 + 150 = 400

Total production of item C in 3 months

= 200 + 200 + 50 = 450

$\therefore$ Required ratio = 700 : 400 : 450

34. (d) Requird %

$$= \frac{36.2 - 26.6}{26.6} \times 100 = \frac{9.6}{26.6} \times 100 = 36.09$$

= 35%

35. (c) Lowest rate of inflation (10.3) was witnessed in USA.

36. (c) Inflation rate of third world countries in 1975 = 14.4 + 26.6 = 41

Inflation rate in 1987 = 16 + 36.2 = 52.2

Required %

$$= \frac{52.2}{41} \times 100 = 127.31 = 125$$

37. (c) Increase in inflation for USA from 1975 to 1987 = 12.7-10.3=2.4%

Increase in inflation for Developed nation = 14.2-11.8 = 2.4%

hence thecontrol on inflation rate continues to be the same for the UAs and for thedeveloped nations.

38. (b) Normal rainfall 100% was experienced in the year 1994 and 1995

39. (a) Year 1991 experienced the least rainfall.

40. (c) In the year 1990, 1994, 1996, 1997 and 1998, more than normal rainfall was experienced.

41. (d) We can not say anything about the flood damage.

42. (c) % increase in imports over its previous year

$$1996 = \frac{500}{2000} \times 100 = 25\%$$

$$1988 = \frac{1790}{2413} \times 100 = 74.2\%$$

$$1989 = \frac{2813}{4203} \times 100 = 66.9\%$$

$$1987 = \frac{602}{1811} \times 100 = 33.24\%$$

Highest increase was in the year 1998.

43. (a) Let import be x time

then $5832 = x \times 1811$

$$\Rightarrow x = \frac{5832}{1811} = 3.22$$

44. (c) Average imports

$$= \frac{3465 + 1811 + 2413 + 4203 + 7016 + 5932 + 2000 + 2500}{8}$$

$$= \frac{29240}{8} = 3655$$

Number of years having imports above average = 3

Number of years having imports below average= 5

$\therefore$ Ratio = 3 : 5

45. (d) Required %

$$= \frac{2500 - 2000}{2000} \times 100 = 25\%$$

46. (d) Required % $= \frac{4203}{3655} \times 100 = 115\%$

47. (c) The imports of wheat in 1984 = 3465 this figure is closest to the average import figure 3655.

48. (c) Total slum population in Calcutta

= 91.9 $\times$ 35%= 32 lakh (approximatelty)

49. (c) Difference = (25.5 $\times$ 21%-29.2 $\times$ 10%)

= 5.355 - 2.920

= 2.435 lakh

50. (b) Calcutta has the highest slum population of 32.165 lakh

51. (d) Slum population of Mumbai - 31.312 lakh

Hence slum population of Calcutta and Mumbai is same.

52. (a) Slum population city wise given below:

Calcutta	32.165 lakh
Mumbai	31.312 lakh
Delhi	17.190 lakh
Chennai	13.728 lakh
Ahmedabad	6.630 lakh
Hyderabad	5.355 lakh
Banglore	2.920 lakh

Clearly slum population of Delhi is 3 time of that of Hyderabad.

53. (d) Total slum population = 109.3 lakh

Population of Mumbai and Ahmedabad = 107.9 lakh

54. (b) $\frac{32.165}{91.9} = x \times \frac{2.92}{29.2}$

$\Rightarrow x = 3.5$

55. (d) Hyderabad is the second city with least population after Banglore.

56. (a) Cleary E has the max number of students (40)

57. (d) Section E has twice students than that of section A

58. (a) Average students in each section

$$= \frac{400+420+440+400}{4} = 415$$

59. (b) If 2 students are moved E to B then three sections B, D, E each will have 38 students.

60. (c) Sales is 1993 = 420 thousand

sales in 1991 = 320 thousand

Difference = 100 thousand = 1 lakh

61. (b) Sales in 1991 - 320 thousand

Sales in 1992 = 400 thousand

Let sales in 1991 is x times that of 1992

$\therefore\ x = \frac{320}{400} = 0.8$

62. (d) % increase of sales in 1992 over 1991

$$= \frac{400-320}{320} \times 100 = 25\%$$

% increase of sales in 1993 over 1992

$$= \frac{420-400}{400} \times 100 = 5\%$$

% increase of sales in 1994 over 1993

$$= \frac{440-420}{420} \times 100 = 4.76\%$$

Hence it is least in the year 1994

63. (c) Requied % $= \frac{440}{400} \times 100 = 110\%$

64. (b) Average =

$$= \frac{440+420+440+400}{4} = \frac{1660}{4} = 415\%$$

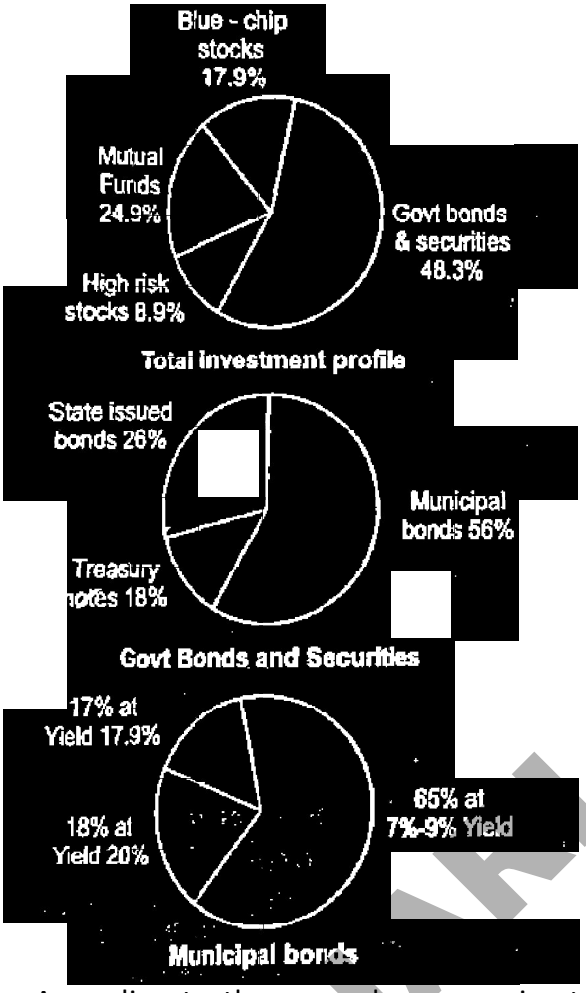
65. (b) Sales for 1992 and 1995 is same

66. (a) 400 $\times$ 80% = 320 which is equal to sales in 1991

Unit-03 Pie Charts

Directions (Qs. 1 to 4): These questions are based on the following pie-charts.

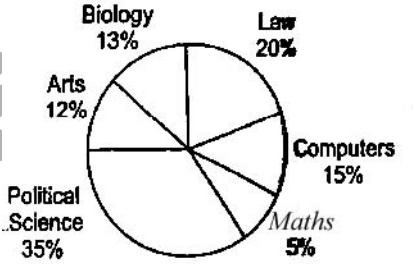
Total Investment Funds = Rs 11 crore 5 lakh.



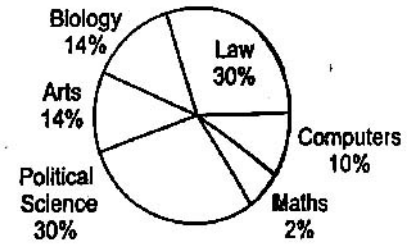
1. According to these graphs, approximately how much money from the investment portfolio was invested in high-risk stocks?
   (a) Rs 98,00,000 (b) 10,10,000
   (c) Rs 9,00,000 (d) None of these
2. Approximately how much money belonging to the investment portfolio was invested in State-issued bonds?
   (a) Rs 4,50,00,000 (b) Rs 3,39,50,000
   (C) Rs 2,87,00,000 (d) None of these
3. Which of the following earned the least amount of money for the investment portfolio?
   (a) Government bonds and securities
   (b) State-issued bonds
   (c) Municipal bonds
   (d) None of the above
4. Which of the following was the greatest?
   (a) The amount of money invested in high-risk stocks.
   (b) The amount of money invested in State issued bonds.
   (c) The amount of money invested in municipal bonds which yielded between 7% and 9%
   (d) The amount of money invested in municipal bonds which yieded over 9%

Directions (Qs. 5 to 8): Study the following pir-charts caredfully to answer These questions.

Percentage of Students ikn a College Studying Various Subjects and the Percentage of Girls out of these
Toal students : 1800
(1200 girls + 600 boys)
Percentage of students in various subjects

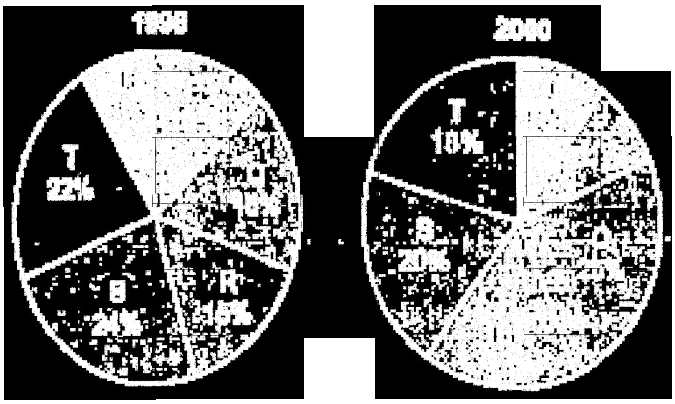


Total Girls: 1200
Percentage of girls in various subjects



5. The number of girls studying Arts in college is
   (a) 242 (b) 168
   (c) 120 (d) 276
6. For which subject is the number of boys the minimum ?
   (a) Law (b) Biology
   (c) Arts (d) Maths
7. For Political Science, what is the ratio of boys and girls ?
   (a) 4:3 (b) 3:4
   (c) 2:3 (d) 4:5
8. The number of girls studying Arts is what percent more than the number of boys studying Arts ?
   (a) 170% (b) 150%
   (C) 80% (d) 250%

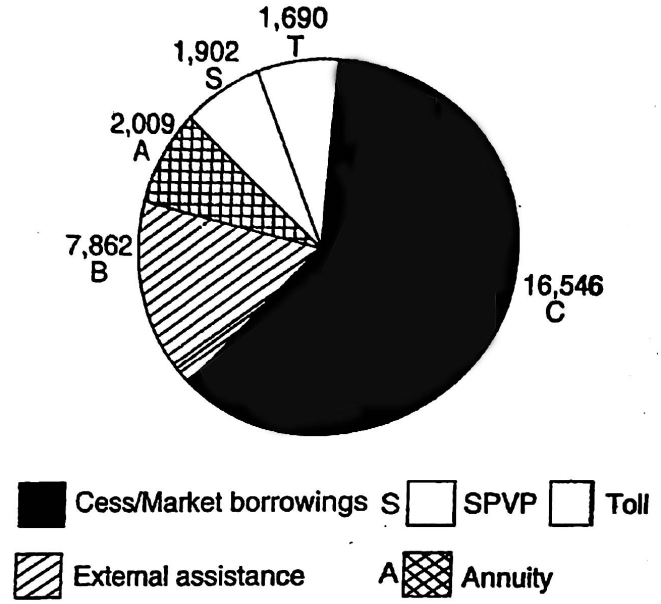
Directions (Qs. 9 to 13) : Study the following graphs which show the number of workers of different categories of a factory for two different years. The total number of workers in 1998 was 2000 and in 2000 was 24000.



9. In which of the categories is the number of workers same in both the years?
   (a) P (b) S
   (c) R (d) T
10. Find the percentage increase in the number of workers in category U in 2000:
   (a) 25% (b) $33\frac{1}{3}\%$
   (c) 50% (d) $66\frac{2}{3}\%$
11. What is the total number of increased workers for the categories in which the number of workers has been increased?
   (a) 468 (b) 382
   (c) 408 (d) 168
12. Which categories have shown decrease in the number of workers from 1998 to 2000?
   (a) P (b) Q
   (C) R (d) T
13. Find the maximum difference between the number of Workers of any two categories taken together for any one year and that of any two for the other year.
   (a) 660 (b) 416
   (c) 636 (d) 502

Directions (Qs. 14 to 16) : The pie chart given below shows the funding arrangements for National Highways Development Projects-Phase 1. Study the chart carefully to answer these questions.

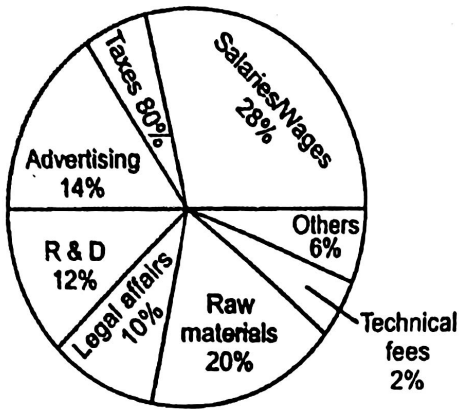
Funding arrangements for NHDP-1
(total cost : Rs. 30,000 Crores)



14. Near about 25% of the funding arrangement is through
   (a) External assistance
   (b) Cess/Market borrowing
   (c) Annuity (d) SPVS
15. The angle of the segment formed at the center of the pie chart, representing Cess/ Market borrowings is approximately
   (a) 100° (b) 90°
   (c) 80^0 (d) 200°
16. If the toll is to be collected through an outsourced agency by allowing a maximum of 10% commission. How much amount should be permitted to be collected by the outsourced agency, so that the project is supported with Rs. 1,690 Crores ?
   (a) Rs. 1878 crores (b) Rs. 1,690 cores
   (c) Rs. 16,900 crores (d) Inadequate data

Directions (Qs. 17 to 20): Study the pie charts given below to answer these questions :

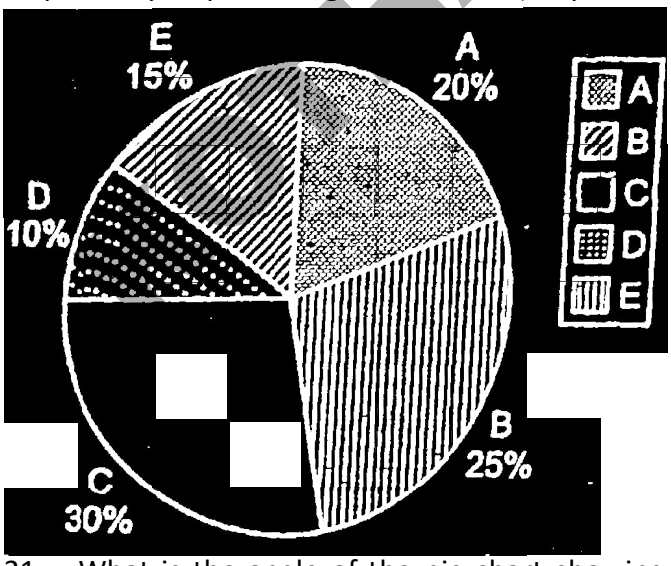
EXPENDITURES OF ACB LTD.
(Major categories only)



2001.- Rs. 355 Crore

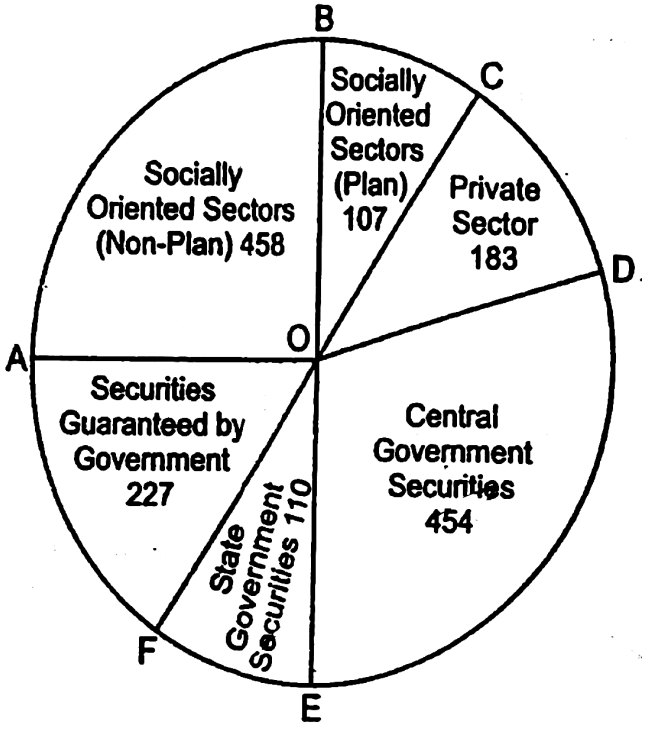
17. The amount spent on raw materials in 2004 was % of the amount spent on.....
    (a) 200,R and D in 2001,
    (b) 103, Salarles/Wages in 2001
    (c) 225, Advertising in 2001
    (d) 100, Raw materials in 2001
18. The amount spent on salaries/wages in 2001 was 140% of the amount spent on :
    (a) R and D in 2001
    (b) Raw materials in 2001
    (c) Advertising in 2001
    (d) Raw materials in 2004
19. The fraction of total expenditure for 2001 and 2004 spent on Legal affairs was about :
    (a) 0.01 (b) 0.12
    (c) 0.05 (d) 0.5
20. The amount spent in 2004 on Advertising is approximately equal to the amount spent on which of the following ?
    (A) Salaries/Wages in 2001
    (B) Advertising, R and D and Technical fees in 2001
    (C) One third of salaries/wages, R and D and taxes in 2004
    (D) All of the above
    (E) None of the above
    (a) (A) and (B) only (b) (A), (B) and (C)
    (C) (D) only (d) (E) only

Directions (Qs. 21 to 24): In the chart given below. A C, D and E represents the costs of paper, printing, bindin miscellaneous and the royalty respectively in publishing a book. (May 2003]



21. What is the angle of the pie chart showing the expenditure incurred on royalty ?
    (a) 15^0 (b) 24°
    (c) 48° (d) 54°
22. The marked price of the book is 20% more than the CP. If the marked price of the book is Rs. 30 then what is the cost of the paper used in a single copy of the book?
    (a) Rs. 6 (b) Rs. 5
    (c) Rs. 4.5 (d) Rs. 6.50
23. Which two expenditures together will form an angle of 108^0 at the centre of the diagram?
    (a) A and E (b) B and E
    (c) A and D (d) D and E
24. If the difference between the two expenditures are represented-by 18 degrees in the diagram then these expenditures must be :
    (a) B and E (b) A and C
    (c) B and D (d) None of these

Directions (Qs.25 to 29): The gross investments of Life Insurance Corporation of India (in crore of rupees) in different sectors are shown in the pie chart given below :



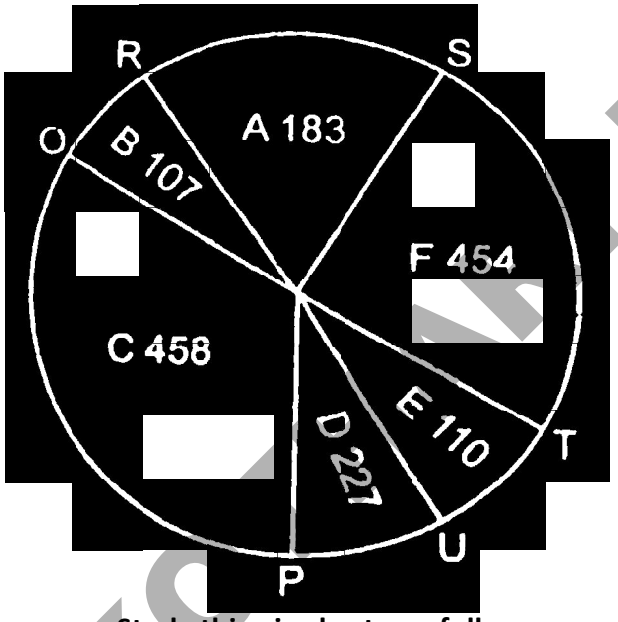
25. The percentage of gross investments in State Government Securities is nearly:
    (a) 7.1% (b) 7.8%
    (C) 8.6% (d) 9.2%
26. The magnitude of the acute $\angle$BOC is nearly :
    (a) 25° (b) 40°
    (c) 50° (d) 60°
27. The investment in socially-oriented sectors (plan and non-plan) is ..... than the investment in Government Securities (central and state) by.....
    (a) More, 4 crore (b) More, 1 crore
    (C) More, 111crore (d) Less, 106 crore

28. The investment in private sector is nearly....per cent higher than the investment in State Government Securities.
(a) 66 (b) 54
(c) 46 (d) 40

29. The ratio of the area of the sector CDEF to the area of the sector CBAF is nearly-
(a) 1 (b) 0.75
(c) 0.50 (d) 0.25

Directions (Qs.30 to 34) : The gross investment of Life Insurance Corporation of India (in crore of rupees) in different sectors are shown in the pie chart given below. The letters denoting the various sectors are :

A = Private sector
B = Socially-oriented sector (plan)
C = Socially-oriented sectors (Non-Plan)
D=Securities guaranteed by the central government
E = State government securities
F = Central government securities



Study this pie chart carefully to answer these questions.

30. The percentage of gross investments in State Government Securities is nearly :
(a) 7.1% (b) 7.8%
(C) 8.6 % (d) None of these

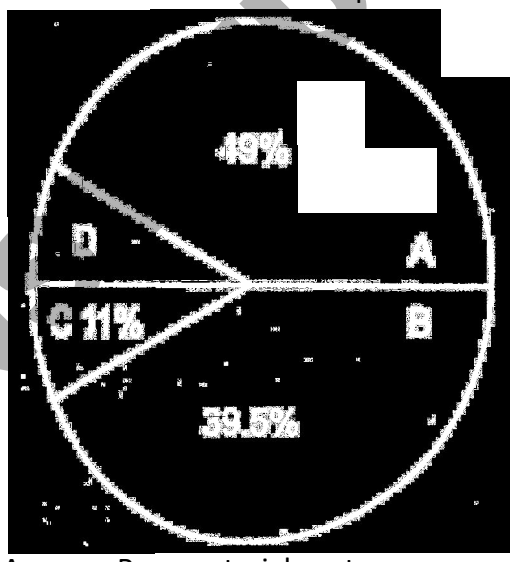
31. The central angle made by the sector indicating the investments made in the socially oriented sectors is nearly :
(a) 123^0 (b) 132°
(C) 126^0 (d) None of these

32. The investment in Private sector is nearly how much per cent higher than the investment in the State Government Securities?
(a) 66% (b) 54%
(C) 46% (d) None of these

33. The ratio, of the area of the circle above ROU to the area of the circle below it is nearly :
(a) 1 (b) 0.966
(c) 0.94 (d) 0.92

34. The investment in Socially oriented sectors (plan and non plan) is .... than the investment in the Government Securities (central and the state) by ...
(a) More, 4 crore (b) More, 1 crore
(c) More, 11 crore (d) Less, 106 crore

Directions (Qs. 35 to 39): Study the diagram given below and answer these questions.



A = Raw material cost
B = Packing material cost
C = Fixed manufacturing expenses
D = Labour cost

35. If the total value in rupees of all the sectors is Rs. 128.3 lakh, then calculate the value of D in rupees-
(a) Rs. 0.06 lakh (b) Rs. 0.6 lakh
(c) Rs. 0.006 lakh (d) Rs. 6.0 lakh

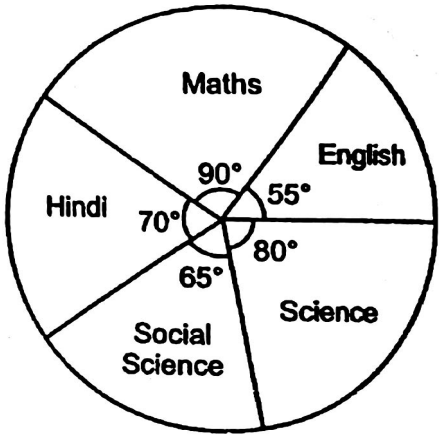
36. If the total cost of production doubles in a period of one year, then what will be the value of D ?
(a) Rs. 10.3 lakh (b) Rs. 1.3 lakh
(c) Rs. 570 lakh (d) Rs. 50.7 lakh

37. If packing cost increased by 2% how much amount will be involved in packing cost ?
(a) 25.6 lakh (b) 52.5 lakh
(c) 52 lakh (d) 50 lakh

38. Packing and raw material costs together represent Rs..... of the total cost of production.
(a) 86 lakh (b) 113 lakh
(c) 115 lakh (d) 111 lakh

39. If the total cost of labour increases from 0.6 lakh to 2.4 lakh, then what percentage of increases does it represent ?
(a) 75% (b) 25%
(c) 200% (d) 300%

Directions (Qs. 40 to 46): These questions are to be answered on the basis of the following pie chart which gives the marks scored by a student in an examination in five subjects — English, Hindi, Mathematics, Science and Social Science. Assuming that the total marks obtained for the examination are 540 answer these questions.



40. The marks scored by the student in Hindi and Mathematics exceed the marks scored in English and Social Science by :
(a) 60 (b) 75
(c) 40 (d) 30

41. The subject in which the student scored 22.2% marks. is:
(a) Hindi (b) Science
(c) Social Science (d) English

42. The subject in which the student scored 105 marks is:
(a) Mathematics (b) Hindi
(c) Science (d) Maths

43. The marks obtained in three subjects, English, Science and Social Science, are what per cent of the total marks?
(a) 45% (b) $44\frac{4}{9}\%$
(c) 55% (d) $55\frac{5}{9}\%$

44. The marks obtained in Mathematics are what per cent of the total marks?
(a) 20% (b) 30%
(c) 35% (d) 25%

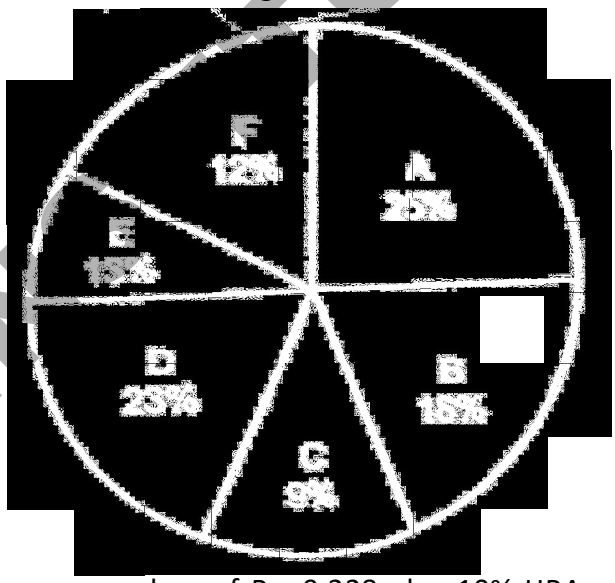
45. The difference of marks between English and Social Science is the same as between :
(a) Science and Hindi
(b) Hindi and Social Science
(c) English and Hindi
(d) Hindi and Science

46. The aggregate marks obtained by the students averaged over the 5 subject is :
(a) 72 (b) 108
(c) 90 (d) 75

Directions (Qs. 47 to 51) : Refer the given pie chart to answer these questions:

X's Domestic Budget

A = Expenditure on food
B = Howe rent
C = Entertainment
D = Education
E = Medical
F = Savings



X earns a salary of Rs. 9,228 plus 10% HRA per month

47. What is X's actual house rent?
(a) Rs. 1,661 (b) Rs. 1,827
(c) Rs. 1,287 (d) None of these

48. If X wants to save at least Rs. 30,000 in two years, then how much extra should he save in the second year? (Currently, the rate of interest for savings is 12% p.a. paid annually)
(a) Rs. 1,000 (b) Rs. 500
(c) He does not need to save extra
(d) None of the above

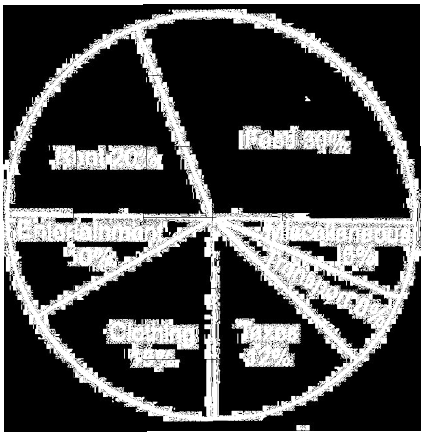
49. After his savings and payment of house rent, how much money is left with him for other things?
(a) Rs. 7,106 (6) Rs. 7,601
(c) Rs. 7,016 (d) None of these

50. How much does X spend on entertainment and food?
(a) Rs. 415 (b) Rs. 835
(c) Rs. 914 (d) None of these

51. If in the next year, a 10% increase in the cost of food and entertainment occurs due to inflation, then what is the new percentage of savings with the same salary?
(a) 8.2% (b) 8.6%
(c) 9.2%
(d) None of the above

Directions (Qs. 52 to 55): These questions refer to the following circle graph showing the expenditure distribution of a certoin family.

Expenditure Distribution of a Certain Family



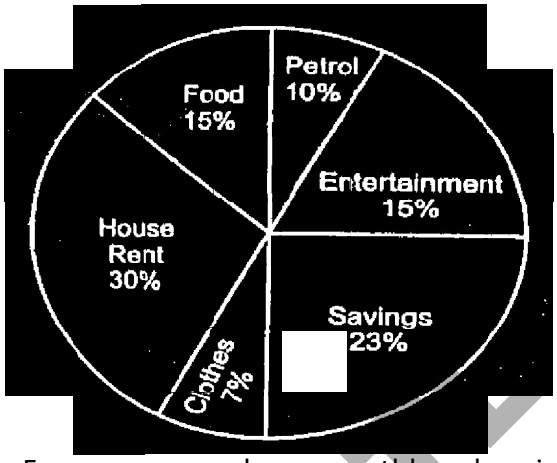
52. If the family spends Rs. 6,500 per month, how much are its annual taxes?
(a) Rs. 7,800 (b) 9,360
(c) Rs. 9,800 (d) 10,080

53. How many degrees should there be in the central angle showing clothing, taxes and transportation combined?
(a) 100° (b) 110°
(c) 120° (d) 126°

54. How much more money per month is spent by the family on food as compared to the rent ?
(a) Rs. 650 (b) Rs. 700
(c) Rs. 750 (d) Rs. 800

55. If the expenditure budget of the family is raised to Rs. 8,000 per month and distribution on various items remain the same, then the monthly expenses on both, the entertainment and the transport, will be
(a) Rs. 1,800 (b) Rs. 1,600
(c) Rs. 1,440 (d) Rs. 1,220

Directions (Qs. 56 to 63) : These questions are to be answered on the basis of the pie chart given below showing how a person's monthly salary is distributed over different expense heads.



56. For a person, whose monthly salary is Rs. 6,000 p.m. how many items are there on which he has to spend more than Rs. 1,000 p.m. ?
(a) 1 (b) 2
(C) 3 (d) 4

57. For the same person, an expenditure of Rs. 1,800 p.m. takes place on :
(a) Petrol (b) House Rent
(c) Food (d) Clothes

58. The annual savings for such a person will be approximately :
(a) Rs. 5,000 (b) Rs. 10,000
(c) Rs. 15,000 (d) Rs. 16,560

59. The monthly salary for a person who follows the same expense pattern, but has a petrol expense of Rs. 500 p.m. is-
(a) Rs. 2,500 (b) Rs. 3,000
(c) Rs. 5,000 (d) Rs. 6,500

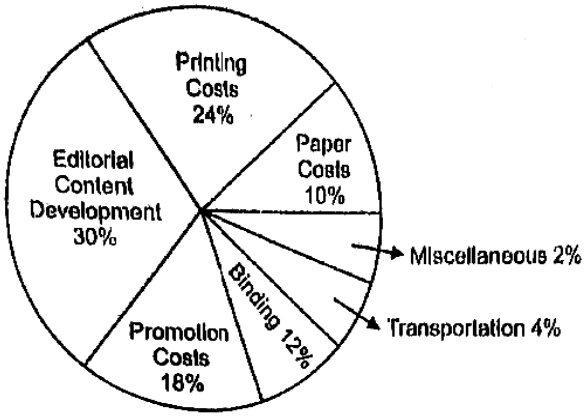
60. The percentage of money spent on clothes and savings is equal to which other single item of expense?
(a) Petrol (b) House Rent
(c) Food (d) Entertainment

61. The angle made at the center of the pie chart by the sector representing the expense on petrol is :
(a) 30° (b) 45°
(c) 36° (d) 90°

62. Given that the pie chart is for a salary of Rs. 6,000 p.m., what would be the ratio of the radius of this pie chart to a pie chart for a person with a salary of Rs. 1,500 p.m.?
(a) 2 :1 (b) 1 : 2
(c) $1 : \sqrt{2}$ (d) $2\sqrt{2} : 1$

63. For a person with a salary of Rs.1,500 p.m., the annual savings would be :
(a) Rs. 4,140 (b) Rs. 2,500
(c) Rs. 2,100 (d) Rs. 4,000

Directions (Qs. 64 to 70): Following 7 questions oro based on the following pie chart which gives the expenditure incurred in printing a magazine. (May 1998]



64. What is the angle for the sector representing paper cost ?
(a) 10° (b) 36°
(c) $23\frac{1}{2}^{0}$ (d) 45°

65. What should be the sentral angle of the sector representing transportation charges ?
(a) 4° (b) 8.4°
(c) 12.4° (d) 14.4°

66. If the editoriax content development cost is Rs. 30,000, then the cost of transportation can be expected to be
(a) Rs. 4000 (b) Rs. 400
(c) Rs. 12000 (d) Rs. 2000

67. For a given issue of the magazine, the miscellaneous cost is Rs. 2000 and the print-run is 12500 copies. What should be the sale price if the publisher desires a profit of 5% ?
(a) Rs. 5 (b) Rs. 7.50
(c) Rs. 8 (d) Rs. 8.40

68. If for the same data as given in the previous question, the print-run were to be 50000 copies, the sale price per copy would have been :
(a) Rs. 5 (b) Rs. 2
(c) Rs. 2.10 (d) Rs, 2.20

69. If the promotional costs for a given issue of the magazine is Rs. 9,000, then the total expenditure in bringing out that issue of the magazine is:
(a) Rs. 50,000 (b) Rs. 1,00,000
(c) Rs. 45,000 (d) Rs. 60,000

70. For the same data as given in the previous question, what is the cost of editorial content development ?
(a) Rs. 45,000 (b) Rs. 30,000
(c) Rs. 15,000 (d) Rs. 20,000

Solution

1. (a) Required investment in high-risk stocks

$$= \frac{11,0500000 \times 8.9}{100}$$

= Rs. 98,34500

2. (d) Required investment

$$= 1105,00,000 \times \frac{48.3}{100} \times \frac{26}{100}$$

= Rs. 1,38,76590

3. (d) High-risk stocks

4. (c)

Subect	Students	Grils	Boys
Arts	216	168	48
Biology	234	168	66
Law	360	360	Nil
Computers	270	120	150
Maths	90	24	66
Political Science	630	360	270
Total	**1800**	**1200**	**600**

5. (b)

6. (a)

7. (b) $\frac{270}{360} = 3:4$

8. (d) $\frac{(168-48)}{48} \times 100 = \frac{120 \times 100}{48} = 250\%$

9. (b) Number of workers in category S in 1998

$$= 2,000 \times \frac{24}{100} = 480$$

10. (c) Number of workers in category U in 1998

$$= 2,000 \times \frac{8}{100} = 480$$

Reqiured %

$$= \frac{240-160}{160} \times 100 = 50\%$$

11. (c) Number of workers in 1998

U = 160, P = 260, Q = 360, R = 300, S = 480

T = 40 Noumber od workers in 2000

U = 240, P = 264, Q = 600,R = 384, S=480

T = 432, Required number = 80 + 4+ 240 + 84 = 408

12. (d)

13. (a) Required number

= (600 + 480)- (160 + 260) = 660

14. (a) External assistance

$$= \frac{7862 \times 100}{30300} \times 25\% \text{ (appeox.)}$$

15. (d) Required angle

$$= \frac{16846 \times 360}{30300} \times 200^0 \text{ (appeox.)}$$

16. (a) Amount required to be permitted

$$= \frac{1690}{0.9} = \text{Rs. 1878 crore}$$

17. (c) The amount spent on raw material in 2004

= 20% of 560= Rs.112 crore

The amount spent on advertising in 2001

= 14% of 560 = Rs. 49.7 crore

Let $112 = x\%$ of 49.7

$$\therefore \ x = \frac{11200}{49.7} = 225\%$$

18. (b) Amount spent on salaries/wages in 2001

$= 355 \times 29\%$ = Rs. 99.4 crore

Amount spent on raw material in 2001

$= 355 \times 20\%$ = Rs. 71 crore

$$\therefore \ x = \frac{9940}{71} = 140\%$$

19. (c) The fraction of total expenditure for 2001 and 2004 on legal affair

$$= \frac{10\% \text{ of } 355 + 2\% \text{ of } 560}{355 + 560}$$

$$= \frac{35.5 + 11.2}{915} = 0.05$$

20. (c) The amount spent on advertising in 2004 = 18% of560

(A) Salaries/Wages in 2001 = 28% of 355 = Rs. 99.4crore True

(B) Amount spend on advertising R and D and technical fee in 2001 = 28% of 355 = Rs. 99.4 crore True

(C) $\frac{1}{3} \times$ (amount spent on salaries/ wages, R and D and Taxes in 2004

$= \frac{1}{3}$ (54% of 560)

$= \frac{1}{3} \times 302.4$ = Rs. 100.0 crore True

Hence all the statements are true.

21. (d) % of Royalty = 15%

$\therefore$ Angle made by Royalty

$= \frac{360}{100} \times 15 = 54^0$

22. (b) Marked Price = $1.2 \times$ Cost price

$\therefore$ Cost price = $\frac{30}{1.2} = 25$

$\therefore$ Costof paper = 24 $\times$ 20%= Rs. 5

23. (c) $360^0 = 100\%$

$\therefore \quad 108^0 = \frac{100}{360} \times 108 = 30\%$

$\therefore \quad (A + D) = 30\%$

24. (a) $18^0 = \frac{100}{360} \times 18 = 5\%$

25. (a) Total gross investments

= 458 + 107 + 183 + 454 + 110 + 227 =

Rs. 1539 crore

$\therefore$ % in State Government Securities

$= \frac{110}{1539} \times 100 = 7.1\%$

approximately

26. (a) $\angle BOC = \frac{107}{1539} \times 360 = 25^0$

approximately

27. (b) Total investment in socially orinted sectors =458 + 107 = 565

Total governmentsecurities =

454 + 110 = 565

Hence option (b) in thecorrect answer

28. (a) Invertmentin private sector = Rs. 110 crore

Investment in private sector = Rs 183 crore

% increase $\frac{183 - 110}{110} \times 100 = 66\%$

approximately

29. (a) $\frac{Area\ CDEF}{Area\ CBEF} \approx \frac{183 + 454 + 110}{107 + 458 + 227}$

$= \frac{747}{792} \approx 1$

30. (a) Required% $= \frac{110}{1539} \times 100 = 7.1\%$

31. (b) Reauired angle

$= \frac{107 + 458}{1539} \times 360 = 132^0$

32. (a) % increase $= \frac{183 - 110}{110} \times 100 = 66\%$

(nearly)

33. (c) Required ratio

$= \frac{183 + 454 + 110}{107 + 458 + 227} = \frac{747}{797} = 0.94$

34. (b) Investment in Socially oriented sector (Plan and Non plan) = (107 + 458) = 65 crores investment in central and State Governmen Securities

= (454 + 110) = Rs. 514 crores

$\therefore$ Difference = (565 - 564) = Rs. 1crore

35. (b) D represents = 0.5%

Share of D = 128.3 $\times$ 0.5%

= 0.6 lakh (approximately)

36. (b) The value of D rould be approximately = Rs. 1.3 lakh

37. (c) Packing cost after increas

= (39.5 + 39.5 $\times$ 2%) = 40.29%

$\therefore$ Amount involved in packing cost

= 128 $\times$ 40.29% = Rs. 51.69

Rs. 52 lakh (approximaterly)

38. (b) Packing and raw material cost together = 88.5%

128.3 $\times$ 88.5%= Rs. 113 Lakh approximately

39. (d) % increase $= \frac{2.4-0.6}{0.6} \times 100 = 300\%$

40. (a) % of markes obtained in Hindi and Maths = (90 + 70) = 160^0

% of marks obtained in English and Social science = (65 + 55) = 120^0

Difference = 160^0 - 120^0 = 40^0

Now 360^0 = 540 marks

$\therefore$ $40^0 = \frac{540}{360} \times 40 = 60$ marks

41. (b) Hindi = $\frac{70}{360} \times 100 = 19.44\%$

Science $\frac{80}{360} \times 100 = 22.22\%$

Social Science $= \frac{65}{360} \times 100 = 18.05\%$

English $= \frac{55}{360} \times 100 = 15.28\%$

42. (b) Maths $= \frac{90}{360} \times 540 = 135$

Hindi = $= \frac{70}{360} \times 540 = 105$

Science $= \frac{80}{360} \times 540 = 120$

43. (d) Requird % $= \frac{55+80+65}{360} \times 100$

$= \frac{200}{360} \times 100 = 55\frac{5}{9}\%$

44. (d) Required % $= \frac{90}{360} \times 100 = 25\%$

45. (d) Difference between Social Science and English (65-55) = 10^0

Difference between Science and Hindi

=(80 - 70) - 10^0

46. (b) Average marks in 5 subjects = $\frac{540}{5} = 108$

47. (b) Total income of the person

= 9228 $\times$ 1.1= Rs.10150.80

$\therefore$ Share of house rent

= 10150.80 $\times$ 18% = Rs. 1827.14

48. (c) Saving of Ist year

= 10150.80 $\times$ 12% $\times$ 12 = Rs.14617.15

Interest on Ist income

= 14617.15 $\times$ 12% = Rs. 1754.06

Saving in IInd year = Rs. 14617.15

Total saving in two year

= (14617.15 + 14617.15 + 1754.06)

= Rs. 30988.36

49. (a) Total income = Rs. 10150.80

Investment in saving and house tent

= (18 + 12) = 30%

$\therefore$ Money left = Rs. 70% *i.e.*

10150.80 $\times$ 70% = Rs. 7105.56

50. (d) Expenses on entertainment and food

= (9 + 25) = 34%

i.e., 10150.80 $\times$ 34% = Rs. 3451.27

51. (b) New saving % = 12 - 10% of (25 + 9)

= 12 - 34 = 8.6%

52. (b) Annual tax= $6500 \times 12\% \times 12$ = Rs/ 9360

53. (d) Required angel $= \frac{360}{100} \times 35 = 126^0$

54. (a) Rs. 6500 $\times$ (30% - 20%) = Rs. 650

55. (c) Expences on entertainment and transport = 8000 $\times$ 18% = Rs. 1440

56. (b) On two items saving and house rent he has to invest more than Rs. 1000

57. (b) $\frac{1800}{6000} \times 100 = 30\%$ He invests Rs. 1800 on house rent.

58. (d) Saving per month = $6000 \times$ 23%

= Rs. 1380

$\therefore$ Annual saving = 1380×12

= Rs.16560

59. (c) 10% = 500, 100% = Rs. 5000

60. (b) Money spent on clothes + Saving = money spent on house rent.

61. (c) Angle made by the sector Pertol

$= \frac{360}{100} \times 10 = 36^0$

62. (a) Let the two radii be r_1 and r_2

Then required ratio

$\frac{\pi_1}{\pi_2} = \frac{6000}{1500} = \frac{4}{1}$

$\therefore \ r_1 : r_2 = 2:1$

63. (a) Saving p.m. $1500 \times \frac{23}{100} = Rs.345$

$\therefore$ Annual saving = 345 $\times$ 12 = Rs.4140

64. (b) Angle for sector representing paper cost

$= \frac{360}{100} \times 10 = 36^0$

65. (b) Angle for sector representing transportation

$= \frac{360}{100} \times 4 = 14.4^0$

66. (a) 30% = 30,000

1% = 1000

$\therefore$ 4% = Rs. 4000

67. (d) Miscellaneous cost = 2%= 2000

$\therefore$ Total cost = Rs. 100000

$\therefore$ CP per copy = $\frac{100000}{12500} = Rs.8$

SP per copy = Rs. 8.40

Profit% = $= \frac{0.40}{8} \times 100 = 5\%$

68. (c) Cost price per copy $= \frac{100000}{50000} = Rs.2$

SP at a profit of 5%

SP = 2 $\times$ 1.05 = Rs. 2.10

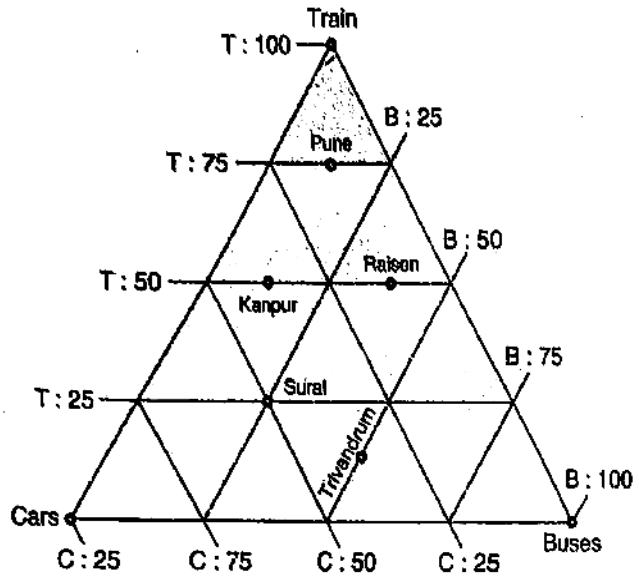
69. (a) Total cost = $\frac{9000 \times 100}{18} = Rs.50,000$

70. (c) 18% = 9000

$30\% = \frac{9000}{18} \times 30 = Rs.15000$

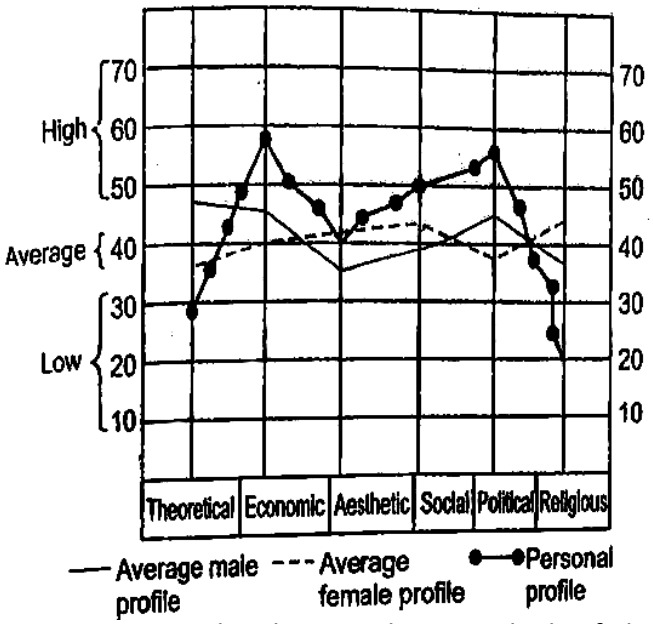
Unit-4 Cartesian Graph on the Two Dimensional X-Y Plane (Line Graphy)

Directions (Qs.1 to 5): A survey was conducted in five cities viz. Pune, Konpur. Raisen, Surat and Trivandrum, for the pengantage of people using T (trains), B (buses), C (cors) as modes of transport number of persons surveyed in the cities Pune, Kanpur, Raisen, Surut and Trivandrum are 2000, 4000, 6000, 30000 and 8000 respectively. Refer to the data in the triangular bar diagram to answer the questions that follow.



1. The city where the least number of persons uses buses is :
   (a) Surat (b) Raisen
   (c) Kanpur (d) Pune
2. The average number of persons using trains for transportation in Pune, Kanpur, Raisen and Trivandrum is :
   (a) 1880 (b) 1750
   (C) 1950
   (d) None of the above
3. The mode of transport used by the least number of persons in all the given cities.
   (a) tains (b) buses
   (c) cars (d) cars and buses
4. Among the given five cities, the cities who less than 30% the people use cars in transport are-
   (a) Kanpur and Trivandrum
   (b) Pune, kanpur and Raisen
   (c) Pune and Raisen
   (d) Pune, Kanpur and Surat
5. Which of the following statments is not true?
   (a) 50% of the people use trains for transport in the cities kanpur and Raisen
   (b) In city Trivandrum, more than 50% of the people use cars for transport
   (c) More percentage of people use buses for transport in the city Surat than in the city Pune.
   (d) In city Raisen, there are more percentage of people using trains for transport than buses.

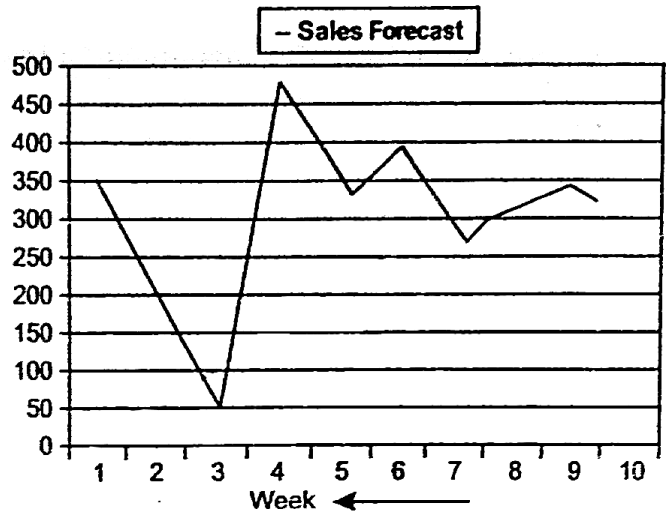
Directions (Qs. 6 to 10) : Use the graph given below to answer these questions : Given is graph is the profile of values of a collage student marked as personal profile. The normative profiles are given as average male profile and overage female profile.



6. Compare the three and state which of the given values is the highest in the personal profile of the student ?
   (a) Theoretical (b) Religious
   (c) Social (d) Economic
7. In the given personal profile, which is the value with the lowest score?
   (a) Theoretical (b) Religious
   (c) Social (d) Aesthetic

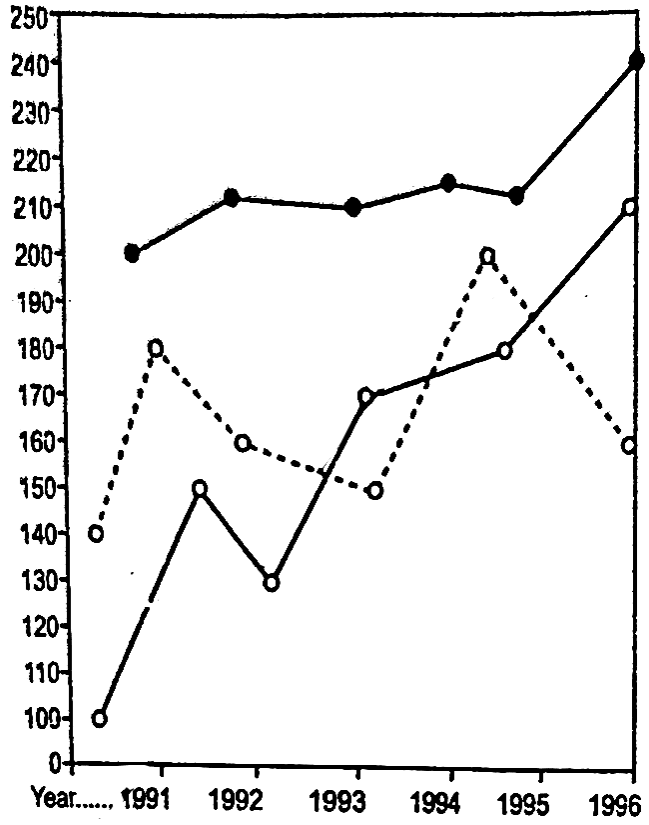
8. In which value score, there exists maximum difference between average female profiles and personal profile?
   (a) Theoretical (b) Riligious
   (c) Economic (d) Political
9. In which value score, there exists convergence between personal profile and average female profile ?
   (a) Theoretical (b) Social
   (c) Aesthetic
   (d) None of the above
10. In which value score, there exists a no difference state between the personal profile and average male profile?
   (a) Economic (b) Social
   (c) Aesthetic
   (d) None of the above

Directions (Qs. 11 to 13) : Study the following graph, showing the soles forecast for the next ten weeks, to answer these questions.



11. If the forecasted demand is met by having uniform production during the weeks at an average level, then the number of weeks during which demand will not be met is :
   (a) 2 (b) 3
   (c) 4 (d) None of these
12. If the production is uniform, then what should be the minimum capacity of the storage space to store the units in excess of demand ?
   (a) 25 (b) 50
   (c) 100 (d) 200
13. If the maximum production capacity is 300 units, then the unmet demand will be-
   (a) 225 (6) 275
   (C) 175
   (d) All the demand will be met

Directions (Qs. 14 to 19) : Study the graph given below to answer these questions



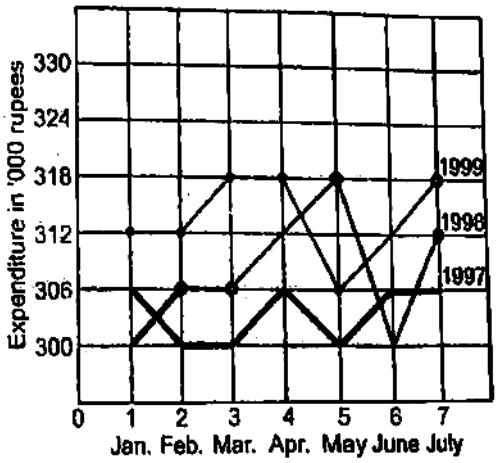
●—● Selling price per car (in Thousands)
●.....● No. of cars sold (in Thousands)
●—●Manufacturing cost per car (in Thousands)

14. In which year, were the gross sales proceeds the highest?
   (a) 1992 (b) 1993
   (c) 1994 (d) 1995
15. Which year was the least profitable from the fiscal point of view?
   (a) 1993 (b) 1994
   (c) 1995 (d) 1996
16. In which year the number of cars sold was the lowest but financial turnover, the maximum?
   (a) 1993 (b) 1994
   (c) 1995 (d) 1996
17. In which year, the maximum profit was generated vis-a-vis in?
   (a) 1991 (b) 1992
   (c) 1993 (d) 1994
18. Which year registered the maximum sales turnover ?
   (a) 1994 (b) 1995
   (c) 1992 (d) 1993
19. In which of the following years, there was the maximum net growth in car sales as compared to its earlier years ?

(a) 1994 (b) 1992
(c) 1993 (d) 1995

Directions (Qs. 20 to 27): Study the data presented in the following groph to answer these questions.

MONTHLY EXPENDITURE OF A FIRM FROM JANUARY TO JULY DURING THE YEARS 1997, 1998, 1999



20. What is the total expenditure during the period under review (7 months) in 1997 ?
(a) Rs. 21,07,000 (b) Rs. 21,96,000
(c) Rs. 21,54,000 (d) Rs. 21,24,000

21. What total expenditure has been made during the year 1997 and 1998 in the period covered in the graph?
(a) Rs. 42,87,800 (b) Rs. 2,70,000
(c) Rs. 48, 27,000 (d) Rs. 42,78,000

22. What is the average monthly expenditure during the ...year 1999 covering the period shown in the graph?
(a) Rs. 2,75,000 (b) Rs. 2,70,000
(c) Rs. 3,14,000 (d) Rs. 2,47,000

23. Which month has been the least expensive during 1999 ?
(a) June (b) April
(c) May (d) July

24. The expenditure in April 1999 was.....higher than that of corresponding period in 1998.
(a) 1.5% (b) 2%
(c) 2.5% (d) 0.94%

25. The expenditure in May 1997 was.... less than of that the corresponding period in 1999.
(a) 3% (b) 2.5%
(c) 1.5% (d) 2%

26. The expenditure of May/June 1998 was..... higher than that of the corresponding period during 1985.
(a) 3% (b) 3.5%
(c) 2% (d) Zero

27. Which of the following statements is correct?
(a) In 1997, the expenditure was more in March than in January.
(b) The expenditure in January 1999 was equivalent to the expenditure in July 1998.
(c) In 1999, the expenditure was less than of 1998.
(d) The total expenditure in January 1997 and 1999 was more than in April 1997 and 1999.

Solution

1. (d) No of persons using buses in

surat $= 3,000 \times \frac{25}{100} = 750$

Raisen $= 6,000 \times \frac{37.5}{100} = 2,250$

Kanpur $= 4,000 \times \frac{12.5}{100} = 500$

Pune $= 2,000 \times \frac{12.5}{100} = 500$

2. (d) Required average

$$\frac{2,000 \times \frac{75}{100} + 4,000 \times \frac{50}{100} + 3,000 \times \frac{50}{100} + 8,00\frac{20}{100}}{4}$$

$$= \frac{1,500 + 2,00 + 1,500 + 1,600}{4} = 1,650$$

3. (b) Only on two cities more than 25 percent profit use bus as mode of transport.

4. (c)

5. (b)

6. (d) From the graph it is clear that personal prodile is highest in economic grade.

7. (b) It is lowest in religious grade.

8. (b) Difference between average female profile and personal prodile is maximum in religious attribute.

9. (c) The graphs of average female profile and personal profile meet (concide) under Aesthetic attribute.

10. (d) None of the above.

11. (d) Average sales forescast for 10 weeks =322

Hance there are 4 weeks huring which demand will not be met.

12. (d)

13. (c) unmet demand = 475 - 300 = 175

14. (d) Sales Proceeds in the year

1992 = 180 $\times$ 210 = Rs. 37800 million

Sales Proceed in the year

1993 = 160 $\times$ 207 = Rs. 33120 million

Sales proceeds in the year

1994 = 150 $\times$ 210 = Rs.31500 million

Sales in the year

1995 = 195 $\times$ 210 = Rs. 40950 million

It is highest in the year 1995.

15. (c) Manudacturing cost

1993	1994	1995	1996
160 $\times$ 130 Rs. 20800 million	150 $\times$ 170 Rs. 25500 million	195 $\times$ 190 = Rs. 37050 million	160 $\times$ 210 =Rs. 33600 million

Profit = Sales - Cost

1993	1994	1995	1996
Rs. 12400 million	Rs. 6000 million	Rs. 3900 million	Rs. 5200 million

16. (d)

	No of cars sold	Finacial turnover
1993	160	33120
1994	150	31500
1995	195	40950
1996	160	38800

Clearly in the year 1996 thenumber of cars sold is least and finacial turnover maximum.

17. (a) In the year 1991 profit generated is the maximum.

18. (b) Sales proceed in the year 1995 is maximum i.e. Rs. 40950

19. (d) From the graph it is very clear that sharp increase in the number of cars sold is witnessed in the year 1995.

20. (d) Total expenditure

= 306 + 300 + 300 + 306 + 300 + 306 + 306 = Rs. 2124 thousands

Rs. = 2124 thousands

21. (d) Total expenditure in the year 1998

= 300 + 306 + 306 + 312 + 318 + 300 + 312 = Rs.2154

$\therefore$ Total expenditure in 1997 and 1998 = 2124 + 2154 = 4278 thousands

22. (c) Average monthly expenditure in the year 1999

$$= \frac{312+312+318+318+306+312+318}{7}$$

23. (c) In the year 1999, May has experienced the least expenses i.e. Rs. 306 thousand

24. (b) Expenditure in Aprial 1998 = 312

Expenditure in Aprial 1999 = 318

$$\text{Required \%} = \frac{9,000}{25,000} = 0.36$$

25. (d) Expenditure in May 1997=300 thousand

Expenditure in May 1999= 306 thousand

$$\text{Required \%} = \frac{6}{306} \times 100 = 1.96 \approx 2\%$$

26. (d)

27. (b) Expenditure in Jan.1999= 312 thousand

Expenditure in July 1998=312 thousand

Hence statement (b) is correct.

Unit 5- Mix Diagrams

Directions (Qs. 1 to 6): Study the following figurtes to answer these questions:

Information on the Poly Propylene Industry in India

1. When consumption is more than the production, the government has to import the shortfall. What percentage as consumption was imported in 2003-04?
   (a) 5.77% (b) 7.36%
   (c) 6.12% (d) 5.65%
2. What was the percentage increase in installed capacity in the year 2003-04 ?
   (a) 10.09% (b) 11.22%
   (c) 12.14% (d) 13.35%
3. Capacity utilization was the maximum in which of the following years?
   (a) 2000-01 (b) 2001-02
   (c) 2002-03 (d) 2004-05
4. In which year was the production as a percentage of installed capacity, the least?
   (a) 2000-01 (b) 2001-02
   (c) 2002-03 (d) 2003-04
5. The installed capacity of HP (In '000 tonnes) in 2003-04 was (Assume the same share of capacity for HP as it had in 2001-02)
   (a) 68 (b) 76
   (c) 78 (d) 83
6. If TC will double its installed capacity of 2003-04 in the year 2005-06 then what would be the installed capacity of the industry in 2005-06 ? (Assume that no other manufacturer adds to their capacity in 2005-06 and that TC had a 46% share in 2003-04).
   (a) 2723 (b) 2763
   (c) 2827
   (d) Can't be determined :

Directions (Qs. 7 to 9) : Refer to the given line graph and the pie charts and answer these questions:

7. Hay many hectares of FSI has been distributed between 1994-2002?
   (a) 3,000, 500 (b) 2,77,500
   (c) 6,57,000 (d) 9,00,000
8. How many years witnessed a decline in FNI and an increase in FSI ?
   (a) 2 (b) 3
   (c) 4 (d) 5
9. During 1994-2002 the greatest proportion of FNI was-put-to commercial use in :
   (a) 1994 (b) 1996
   (c) 1999 (d) 2002

Directions (Qs. 10 to 13): Refer to the givan below to answer these questions.

Investment Portfolio

Total Investment Profile Rs. 5.4 crore — Government Bonds & Securities

10. Approximately, how much money of the Investment portfoXo has been invested in high-risk stocks?
    (a) Rs. 4,806,000 (b) Rs. 5,130,000
    (c) Rs. 5,400,000 (d) Rs. 3,600,000
11. Approximately, how much money has been invested in state-issued bonds?
    (a) Rs. 65,20,500 (b) Rs. 67,81,320
    (c) Rs, 62,59,680 (d) Rs. 52,16,400
12. The ratio of money invested in Mutual Funds and State-issued Bonds is approximately :
    (a) 1:1 (b) 2:1
    (c) 1:3 (d) 3:1
13. Which of the following earned the least amount of money for the investment portfolio?
    (a) PSU Bonds (b) Mutual Funds
    (c) Blue-chip Stocks
    (d) Cannot be determined

Directions (Qs. 14 to 16) : Answer these questions based on the pie-chart given below :

Expenditure of Kanpur Industries

14. The amount spent on materials for 1980 was 120% of the amount spent on :
    (a) research in 1980
    (b) advertising in 1990
    (c) compensation in 1980
    (d) legal affairs in 1980
15. The fraction of the total expenditures for 1980 and 1990 spent on compensation was about :
    (a) 1/2 (b) 1/3
    (c) 1/4 (d) 1/5
16. The amount spent in 1980 for materials, advertising and taxes was about the same as:
    (a) the amount spent on research and construction in 1990.
    (b) the amount spent for compensation in 1990.
    (c) the amount spent on materials in 1990
    (d) 5/3 of the amount spent on advertising in 1990.

Directions (Qs. 17 to 26) : Study the following graph and answer these questions given below it.

Tea in India (In million kg)

Exports Production

(Per capita availability in gm)

17. Which year shows the maximum percentage of export with respect to production ?
(a) 1992 (b) 1993
(c) 1996 (d) 1995

18. The population of India in 1993 was:
(a) 800 million (b) 1080 million
(c) 985 million (d) 900 million

19. If the area under tea production was less by 10% in 1994 than in 1993, then the approximate rate of increase in productivity of tea in 1994 was :
(a) 97.22 (b) 3
(c) 35
(d) Cannot be determined

20. The average proportion of tea exported to the tea produced over the period is :
(a) 0.87 (b) 0.47
(c) 0.48 (d) 0.66

21. What is the first half decade's average per capita availability of tea?
(a) 475 g (b) 535 g
(c) 446 g (d) 430 g

22. In which year was the per capita availability of tea minimum ?
(a) 1996 (b) 1994
(c) 1991 (d) None of these

23. In which year was there minimum percentage of export with respect to production ?
(a) 1991 (b) 1992
(c) 1993 (d) 1994

24. In which year we had maximum quantity of tea for domestic consumption ?
(a) 1994 (b) 1991
(c) 1993 (d) 1996

25. What approximately was the average quantity of tea available for domestic consumption during the period?
(a) 324.3 million kg (b) 400 million kg
(c) 410.3 million kg (d) 320.3 million kg

26. What was approximately the average population during the period ?
(a) 625 million (b) 624 million
(c) 600 million (d) 757 million

Solution

1. (a) Consumption is more than the production in the year 2003-04

$$\text{Requied \%} = \frac{1576-1485}{1576}\times 100$$

$$= \frac{9100}{1576} = 5.77\%$$

2. (b) Required % increase

$$= = \frac{1893-1702}{1702} = \frac{19,100}{1702} = 11.22\%$$

3. (b) Capacity utilization in 2000-01

$$= \frac{1363}{1702}\times 100 = 80\%$$

Capacity utilization in 2001-02

$$= \frac{1523}{1702}\times 100 = 89\%$$

Capacity utilization in 2002-03

$$= \frac{1488}{1702}\times 100 = 87\%$$

Capacity utilization in 2003-04

$$= \frac{1485}{1893}\times 100 = 78\%$$

Capacity utilization in 2004-05

$$= \frac{1596}{1893}\times 100 = 84\%$$

It is maximum in the year 2001-02

4. (d) As calculated in the previous question production as a percentage of installed capacitywas least in the year 2003-04

5. (b) Installed capacity of HP in 2003-04 = 4% of 1893 = 75.72 $\approx$ 76 approximately

6. (b) Installed capacity of industry in 2003-04 = 100%

Indtalled capacity industry in 2005-06 = 146%

= 1893 $\times$ 146% $\approx$ 2763

7. (d) No of hectares of FSI

= 40 + 60 + 80 + 120 + 100 + 110 + 120 + 150 + 120 = 900 thousand hectares.

8. (a) The years which have witnessed on increase in FSI are 1995, 1996, 1997, 1999, 2000 and 2001

Clearly the years which are common to both are 1997 and 2000

9. (c) Propotation of FNI in commerical use

$$\text{in 1994} = \frac{2000}{10,000} = 0.2$$

$$\text{in 1996} = \frac{15,000}{70,000} = 0.214$$

$$\text{in 1999} = \frac{30,000}{30,000} = 1$$

$$\text{in 2002} = \frac{9,000}{25,000} = 0.36$$

10. (a) Money invested in the high-risk stock

= 8.9% of 5.4 crore = 48,06,000

11. (b) Investment in Govt. Bonds and Securities = 48.3% of 5.4 crore

Investment in State-issued Bonds

= 26% of (48.3% of 5.4 crore)

= 6781320

12. (b) Money invested in Mutual funds = 24.9% of 5.4 crore = 1.3446 crore

= Rs.13446000

StateIssued Bonds (as already calculated) Rs.6781320

$\therefore$ Required ratio = 13446000 : 6781320

$\approx$ 2:1

13. (c) PSU Bonds = 56% of (48% of 5.4 crore)

= Rs. 14605920

Mutual funds = Rs. 13446000.

14. (a) Amount spent on material

= 3087 $\times$ 18% = 555.66 millions

$\Rightarrow$ 463.05 $\times$ 120% = 802.62 million

15. (a) Expenditure on compensation in 1980
= 3087 $\times$ 26% = 802.62 million
Expenditure on compensation in
1990 = 4851 $\times$ 38% = 1843.38 million
Required fraction $= \frac{802.62}{1843.38} \approx \frac{1}{2}$

16. (d) Amount spent in 1980 on materials + Advertising + Taxes
= 3087 $\times$ 40% = 1234.80 million
Now, $\frac{5}{3}$ of the amount spent on Advertisement in 1990.
$= \frac{5}{3} \times 4851 \times 15\% = 1212.75$

17. (c) In the year 1992% of export of products
$= \frac{180}{540}\% = 33.33\%$
In the year 1993 % of export of producation = $= \frac{288}{720}\% = 40\%$
In the year 1995 % of export of production = $= \frac{400}{660}\% = 66.66\%$

18. (b) The Population of India in 1993
$= = \frac{720-288}{0.4} = \frac{432}{0.4} = 1080$ million

19. (d) It cannot be determined

20. (b) Average tea exported during 1991-1996
= 96 +180 + 288 + 340 + 340 + 400 + 450
= 1754 million kg
Average tea produced during 1991-1996
= 480 + 540 + 720 + 700 + 600+ 660 = 3700 million kg
$\therefore$ Required ratio = $= \frac{1754}{3700} = 0.47$

21. (d) Average per capita availability
$= \frac{390+410+400+450+500}{5}$
$= \frac{2150}{5} = 430g$

22. (c) Clearly in the year 1991 it was the least 390 g

23. (a) Minimum percentage of export with respect to producation is witnessed in the year 1991.

24. (c) Availability of tea fordomestic consumption in 1991 = 480-96=384
Availability of tea for domestic consumption in 1993 = 720-288-360
Availability of tea for domestic consumption in 1994= 700-288= 360
Availability of tea for domestic consumption in 1996 = 660-450 = 210
Hence maximum quantity is available in the year 1993.

25. (a) Total availability of tea for domestic consumption
= 384 + 360 + 432 + 360 + 200 + 210
= 1946
$\therefore$ Average availability = $= \frac{1946}{6} = 324.3$

26. (d) Population in 1991 $= \frac{384}{.39} = 985$ million
Population in 1992 $= \frac{360}{0.41} = 878$ million
Population in 1993 $= \frac{432}{0.40} = 1080$ million
Population in 1994 $= \frac{360}{0.45} = 800$ million
Population in 1995 $= \frac{200}{0.5} = 400$ million
Population in 1996 $= \frac{210}{0.525} = 400$ million
$\therefore$ Averge population $= \frac{4543}{6} = 757$ million

Unit 6- Data Sufficiency

Directions (Qs.1 to 4) : Each of the questions below is followed by two statements labelled (A) and (B) Decide whether the data given in the statements is sufficient for answering the question. Mark your answer as :

(a) If both statements (A) and (B) together are sufficient to answer the question asked, but neither statement alone is sufficient.

(b) If statement (B) alone is sufficient but statement (A) alone is not sufficient to answer the question asked.

(c) if statement (A) alone is sufficient but statement (B) alone is not sufficient to answer the question asked.

(d) If each statement is sufficient by itself to answer the question asked.

1. How much did the salesman earn from the sale of 3 cars?

(A) Each car sold for Rs 3,40,000

(B) He received a 2% commission on each sale.

2. What does WXY equal ?

(A) W = X + Y

(B) WXYZ = 6Z where $Z \neq 0$

3. Which number is the greatest C, D or E ?

(A) 2D > 2E > 2C

(B) C + 2 = D $\geq$ E

4. If Sanjay can paint a house in 15 h working alone, how long will it take to paint the house if Mohit helps him ?

(A) Mohit can paint the house in 20 h working alone.

(B) Working together with Sanjay, Mohit does 3/7 of the total work.

Directions (Qs. 5 to 8): Each of the questions given below consists of a question and two statements numbered I ond II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question in each case. Read both the statements and give answer as :

(a) If the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.

(b) If the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.

(c) If the data either in statement I alone or in statement II alone are sufficient to answer the question.

(d) If the data even in both statements I and II together are not sufficient to answer the question.

5. Is K^2 an integer ?

I. K is a negative whole number.

II. $4K^2$ is an integer.

6. Is $x^2 : y^2 < 1$?

I. $(y-x)(x+y) = 40\%of\,60 - 120\%of\,20$

II. $x < y$

7. By selling a product for Rs 100, how much profit was earned ?

I. 20% profit would have been earned if it had been sold for Rs 90.

II. The profit was one-third of the purchase price.

8. What is the rate of CI on a sum of money?

I. The difference between CI and SI at the same rate of interest for 2 yr is Rs 43.20 and SI at the end of 5 yr is Rs 3600.

II. The difference between CI and SI at the same rate of interest on Rs 12000 for 3 yr is Rs 132.19.

Directions (Qs. 9 to 13): The following questions are accompanied by three statements (A), (B) and (C). You have to determine which statements(s) is/are sufficient /necessary to answer the questions.

9. How much minimum marks are required to pass an examination?

A. Student A secured 38% marks in the examination and failed by 8 marks. Student B secured 42% marks in the same examination and got 12 more than the minimum pass marks.

B. Student A secured 35% of the total marks in the examination and failed by 23 marks. If he had secured 25 more marks, his percentage of marks would have been 40%.

C. A student will be declared passed if he secures 39.60% of the total marks.

(a) Any two of them (b) Only A

(c) C and either A or B

(d) Either A or B only

10. What will be the share of R in the profit earned by V, R and A together?

A. They together invested an amount of Rs 54000 for a period of one year.

B. R's investment was 25% less than V's and 50% more give than A's.

C. The profit of V is Rs 4000 more than that of A.

(a) Only A and B together

(b) B and either A or Conly

(c) Only B

(d) Only B and C together

11. What was the profit earned on the cost price by Mahesh by selling an article ?

A. He got 15% concession on the labelled price in buying that article.

B. He sold it for Rs 3060.

C. He earned a profit of 2% on the labelled price.

(a) Only A and B together are required

(b) Only B and C together are required

(c) Only either A or C and B together are required

(d) All A, B and C together are required

12. 15 men and 20 women work together for 5 days and then 5 men and 8 women leave the group. In how many days will the remaining work be finished by the remaining people ?

A 10 men and 15 women together can complete the work in $17\frac{1}{2}$ days.

B. The work done by 1 man is equal to the work done by 2 women.

C. 20 men alone can do the entire work in 15 days.

(a) Any one of them (b) Either A or C

(c) Only B (d) Any two of them

13. What is the cost of flooring a rectangular hall?

A. The length and the breadth of the hall are in the ratio of 3 : 2.

B. The length of the hall is 48 m and the cost of flooring is Rs 850 per square metre.

C. The perimeter of the ball is 160 m and the cost of 22. flooring is Rs 850 per square metre.

(a) Only A and B (b) Only A and C

(c) Only C

(d) Any two of the three

Directions (Qs. 14 to 17) : Each of these questions is accompanied by three statements A, B and C. You have to determine which statement (s) is/ are sufficient/necessary to answer the given question.

14. Find three positive consecutive even numbers.

A. The average of four consecutive even numbers starting from the last of the given numbers is 17.

B. The difference of the highest and the lowest number is 4.

C. The sum of the squares of the three numbers is 440.

(a) A alone is sufficient

(b) C is sufficient

(c) A and B are sufficient

(d) Either A or C is sufficient

15. Sonu's income is how much more than Monu's?

A. Sonu's income is 30% less than her husband's whose provident fund deduction at the rate of 5% is Rs 975 per month.

B. Monu spends 30% of her income on house rent, 15% of which is electricity bill.

C. Sonu's expenditure on house rent is Rs 4,500 more than of the Monu's.

(a) Only B and C are sufficient

(b) Any two statements are sufficient

(c) Only A and C are sufficient

(d) Even all together are not sufficient

16. Find out the share of B out of the combined share of A, B and C of Rs 946.

A. The share of A is 2/9 of the combined share of B and C.

B. The share of B is 3/19 of the combined share of A and C.

C. The share of C is 2.143 times the combined share of B and A.

(a) Only statements A and C are sufficient

(b) Only statement B is sufficient

(c) Any two statements are sufficient

(d) Either statements A and C together or B alone is sufficient

17. Mohan is 6 years older than Sohan. What will be the sum of their present ages?

A. After 6 years, the ratio of their ages will be 6 : 5.

B. The ratio of their present ages is 5 : 4.

C. 6 years ago, the ratio of their ages was 4 : 3

(a) Only B is sufficient

(b) Only A is sufficient

(c) Only A and C together are sufficient

(d) Any one of A, B and C is sufficient

Directions (Qs. 18 to 21) : Each of these question consists of a question and the two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the given question. Read both the statements and give answer as :

(a) If the data in statenrent I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer.

(b) If the data either in statement I alone or in statement II alone are sufficient to answer the question.

(c) If the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer.

(d) If the data even in both the statements I and II together are not sufficient to answer the question.

18. In a two-digit number, the digit at unit's place is 4 more than the digit at the tens place. Find the two-digit number.

I. Sum of their digits is 10.

II. The difference between the number and the number obtained by interchanging the positions of the digits is 36.

19. What is average age of the children in a class?

I. The age of the teacher is as many years as the number of children.

II. The average age increases by 1 year if the teacher's age is also included.

20. Which pewspaper has the maximum circulation in Delhi?

I. 2 lakh copies of newspaper X are sold in Delhi while the circulation of newspaper Y is estimated at 3 lakh.

II. The circulation of newspaper Y is 55 per cent of the total circulation of newspapers.

21. What is the difference between the share of profits of Rekha and Nutan out of a profit of Rs 6000 at the end of the year?

I. Rekha invested Rs 50,000 and withdrew Rs 1,000 after 4 months.

II. For the last 8 months, Nutan's capital was 125% of the Rekha's.

Directions (Qs. 22 to 26) : Each of the follow as two statements labeled as (A) and (B).

(a) If statement A by itself is sufficient to answer the questions.

(b) If statement B by itself is sufficient to answer the question.

(c) If both the statements A and B taken together are sufficient to answer the question but neither statement by itself is sufficient.

(d) If statements A and B taken together are not sufficient to answer the question and more data is required.

22. $x > y$, Is $(a + 2b + 3c)^2 > (a - 2b - 3c)^2$?

[A] $x = a + 2b + 3c$ [B] $y = a - 26 - 3c$

23. $x > y > 0$ Is $2x^2 > 3^y$?

[A] $x > 2y$ [B] $x \le 2y + 3$

24. Is quadrilateral PQRS a rectangle?

[A] It is a parallelogram.

[B] It is a square.

25. A is green if and only if B is white and at the same time C is yellow. Is A green?

[A] C is yellow

[B] B is white

26. Is Q an integer?

[A] P + Q is an even integer.

[B] P-Qis an even integer.

Directions (Qs. 27 to 31) : Each of these has a question followed by two statements numbered I and II. You have to decide Whether the data provided in the statements are sufficient to answer the question. Read both the statements and mark answer as :

(a) If the data in statement II alone are sufficient to answer the question, while the data in statement 1 alone are not sufficient to answer the question.

(b) If the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question

(c) If the data eigther in statement I alone or in statement II alone are sufficient to answer the question.

(d) If the data given in both statements I and II together are not sufficient to answer the question.

27. How much minimum marks will be required to pass an examination?

I. Student A secured 32% marks in that examination and he failed by I mark. Student B secured 36% marks in the same examination and his marks were I more than the minimum pass marks.

II. Student A secured 30% of full marks in the examination and he failed by 2 marks. If he had secured 5 more marks his percentage of marks would have been 40%.

28. X, Y and Z are integers Is X and odd number?

I. An odd number is obtained when X is divided by 5.

II. (X+Y) is an odd number.

29. What selling price should be marked on the article?

I. Discount of 5% is, to be given and profit percentage should be double the discount. Purchase cost is in the range of Rs. 300-Rs. 400.

II. 10% discount is to be ailowed and 15% profit is to be obtainechon the purchase cost of Rs. 200 of the article.

30. What is the height of a right-angle triangle?

I The area of the right-angled triangle is equa to the area of a rectangle whose breadth is 12 cm.

II. The length of the rectangle is 18 cm.

31. A, B and C are integers. Is B an even number?

I. (A + B) is an odd number

II. (C+B) is an odd number.

Directions (QS. 32 to 36) : Each of these questions has a question followed by two statements labelled as A and B. Use the data given in the statements A and B together with other information to decide whether frese statements are sufficient to answer the given question. Mark your answer as:

(a) If you can get the answer from statement I alone but not from II alone.

(b) If you can get the answer from I alone but not from II alone.

(c) If you can get the answer from both the statements I and II together but not from I alone or II alone.

(d) If you cannot get the answer from the statements and II together and need more data.

32. How many families in Jammu city own exactly two cars ?

I. 150 families in Jammu city own at least one car.

II. 45 families in Jammu city own at least three cars.

33. Ashok and Pawan are standing together on a sunny day Ashok's shadow is 10 feet long. Pawan's shadow is 9 feet long. How tall is Pawan ?

I. Ashok is 6 feet tall.

II. Ashok is standing 2 feet away from Pawan.

34. How far is it from town P to Q ? Town R is 30 km from town P?

I. It is 20 km/from town Q to town R.

II. There is a railway line between town P and town Q.

35. What percentage of families in a city have monthly income of Rs. 25000 and own a house?

I. 28% of all the families in the city have a monthly income of over Rs. 25000 p.m.

II. 40% of all the families in the city with the monthly income of Rs. 25000 own a house.

36. How much does Mona weigh?

I. Mona and Vicky together weigh 120 kg

II. Vicky weights twice as much as Mona

Directions (Qs 37 to 40): In each of these questions, two statements I and II follow a question. Mark your answer as :

(a) If the question can be answered by using any one statement alone, but not by using other statement alone.

(b) lf the question can be answered by using either of the statements alone.

(c) If the question can be answered by using both the statements together, but it cannot be answered by using either of the statements alone.

(d) If the question cannot be answered even by using both the statements together.

37. Meena wants to find $\log_{70} 96$

I. She knows the value of $\log_{96} 70$.

II. She knows the value of $\log_{10} 70$.

38. Find the sum of a Geometric series 1,3,9,27,81 for N terms.

I. Nth term is 729.

II. Next term after the N^{th} term is thrice of it.

39. A moving train moves Y meters int seconds. Find its acceleration

I. $Y = t^3 - 4t^2 + 16t - 2$.

II. Velocity at the moment was 20 m/s.

39. There are three sets A, B and C. Find. $A \cap (B \cap C)$.

I. $A \cup B$ and $A \cup C$ are known.

II. $A \cap B$ and $A \cap C$ are known.

Directions (Qs. 41 to 45) : Each of these questions is followed by two statements I and ll : Mark your answer as :

(a) If the question can be answered with the help of statement I alone.

(b) If the question can be answered with the help of the statement II alone.

(c) If the question can be answered with the help of both the statements but not with the help of the either statement alone.

(d) If the question cannot be answered even by using both the statements together.

41. Is X > Y ?

I. $Y > 0$ II. $\frac{x}{y} > 1$

42. P, Q, R and S lie in the same order on a straight line. How many metres apart are Q and R?

I. The distance from P to Q is 15 metres

II. The distance from Q to S is 20 metres

43. How much distance did the train cover ?

I. The average speed of the train was 60 km per hour.

II. During its 8 hours journey it ran 3 hours at 75 km per hour and 5 hours at 45 km per hour.

44. What is the number of particular page in a book ?

I. The number is a multiple of 3 and is less than 5.

II. The number is a multiple of 3 and is less than 10.

45. How many minutes does the clock lose a day?

I. The clock reads 4:00 when it is really 3:48.

II. The clock is 40 seconds fast each hours

Directions (Qs. 46 to 54): In these questions, a question is followed by two statements I and II.

(a) If statement I is sufficient to answer the question asked, but statement 11 by itself is not sufficient to answer the question.

(b) If statement il by itself is sufficient to answer the question, but statement 1 alone is not sufficient to answer the question.

(c) if both that statements 1 and Il together are sufficient to answer the question but neither statement by itself is sufficient to answer the question.

(d) If the two statement, even when taken together, are not sufficient to answer the question.

46. Is a given rectangular block, a cube ?

I. At least 2 faces of the rectangular block are squares.

II. The volume of the block is 64.

47. Is x^3 equal to 125?

I. $x > 4$

II. $x < 6$

48. Three packages have a combined weight of 50kg. What is the weight of the heaviest package ?

I. One package weighs 15 kg

II. One package weighs 25 kg

49. What is the value of x ?

I. $X + 2y = 3$

II. $x - y = 0$

50. What is the value of $\frac{p}{q} + \frac{r}{s}$?

I. ps + gr = 2 II. qs=2

51. Sushmita walked from her home to the bus stop and back again. How long did it take her to make the entire trip?
   I. She walked from home to the bus stop at the rate of 3 km/hr,
   II. She walked back to home @ 5 km/hr.

52. Sushmita made five deposits in her savings account. What was the total amount deposited?
   I. The average amount deposited was Rs. 6500.
   II. The largest deposit was Rs. 9,500 and the smallest deposit was Rs. 4500.

53. In a computer course students have a choice of either studying C++ or visual Basic, but they are allowed to take both for extra credits. What is the fraction of students taking both ?
   I. 3/4th of the students studied C + +
   II. 2/3rd of the students studied Visual Basic.

54. How many marbles are contained in a certain jar?
   I. The marbles can be evenly divided into group each group having a dozen marbles.
   II. There are more than 140 but fewer than 150 marbles in the jar.

Directions (Qs. 55 to 69): In the following 15 questions there is a question followed by two statements I and II. Use the data given in statements I and II together with other facts of common knowledge to decide whether the statements are sufficient to answer the given question. Then choose answer as :

(a) If you can get the answer to the given question from statement I alone but not from II alone.

(b) If you can get the answer to the question from 11 alone but not from I alone.

(c) If both I and II together are required to answer the given question.

(d) If more data is needed.

55. Is x greater than y?
   I. x = 2y
   II. x = y + 2

56. How many books are on the bookshelf ?
   I. The bookshelf is 12 feet long.
   II. The average weight of each book is 800g.

57. Find x + y.
   I. x - y = 6
   II. 2x + 3y =7

58. Is 2^n divisible by 8 ?
   I. n is an odd integer.
   II. n is an integer greater than 5.

59. Do the points P and Q lie on the same circle with centre (0,0)?
   I. The coordinates of the point P are (2, 3)
   II. The coordinates of the point Q are (4, 1)

60. Is x positive ?
   I. x + 3x -4 = 0.
   II. x > -2

61. Is the integer K odd or even?
   I. K' is odd.
   II. 2K is even.

62. Is a number divisible by 9?
   I. The number is divisible by 3.
   II. The number is divisible by 27.

63. What is x + y + z ?
   I. x + y = 3
   II. y +z = 2

64. How long will it take to travel from A and B ? It takes 4 hours to travel from A to B and back to A.
   I. It takes 25% more time to travel from A to B than it does to travel B to A
   II. C is midway between A and B and it takes 2 hours to travel from A and C and back to A.

65. Is x > y ?
   I. $(x + y)^2 > 0$.
   II. x is positive.

66. A large corporation has 7000 employees. What is the average yearly wage of an employee in the corporation ?
   I. 4,000 of the employees are executives
   II. The total wage bill for the company each year is Rs. 77,000,000

67. Is a quadrilateral ABCD a square ?
   I. A pair of adjacent sides are equal.
   II. The angle enclosed by these equal adjacent sides is 90°.

68. What was Ram Gopal's income in 1990?
   I. His total income for 1988, 1989 and 1990 was Rs. 3,00,000.
   II. He earned 20% more in 1989 than what he did in 1988.

69. What is the area of the shaded part of thecircle?
   I. The radius of the circle is 4.
   II. *x* is 60.

Solution

1. (a) From A and B :

Required earning $= \frac{2}{100} \times 340000 \times 3$

$= 2 \times 3400 \times 3$

= Rs. 20400

2. (b) From B : WXY = 6

3. (c) From A : D > E > C

$\therefore$ D is the greatest.

4. (d) From A :

Required time = $= \frac{15 \times 20}{15 + 20}$

$= \frac{300}{35} = 8\frac{4}{7} h.$

From B : We get

Ratio of eddiciencies of Sanjay and mohit = 4 : 3

$\therefore$ Required time tofinish the work by Sanjay and Mohit together

$= \frac{15 \times 4}{(4+3)} = 8\frac{4}{7} h.$

5. (a) If K is a negative whole number K^2 is definitely an integer. From II, K^2 may be an integer or a fraction.

Hence (a) is the correct answer.

6. (c) (i) $(y - x)\ (x + y)$

= 40% of 60 - 120% of 20

= 24 - 24 = 0

or $y^2 - x^2 = 0$

or $y^2 - x^2$ or $x^2 : y^2 = 1$

(ii) $x < y \Rightarrow \frac{x}{y} < 1$ or $\frac{x^2}{y^2} < 1$

7. (c) (i) CP $= \frac{100}{120} \times 90$ Rs.75

Profit = 100 - 75 = Rs. 25

(ii) CP $+ \frac{CP}{3}$ = Rs. 100

or CP $= \frac{100 \times 3}{4}$ = Rs. 75

Profit = Rs. 25

8. (c) From both the statements, we can get the rate of CI.

9. (d) From both A and B we can get the minimum marks required to pass the examination.

From (c), we cannot get the pass marks as the maximum marks in the examination is not given.

10. (b) If we combined the information given in B with either A or C, we can get the share of R in the profit.

11. (d) If we use all the information given in A, B, C, together, we can get the required answer.

12. (d) Using any two of the statements with the information given in the question, we can get the required answer.

13. (d) Any two of the statements given sufficient to answer the questions.

14. (a) From A

$\frac{x + (x+2) + (x+4) + (x+6)}{4} = 17$

$\Rightarrow 4x = 68 - 12$

$4x = 56 \Rightarrow x = 14$

Hence, number are 14, 16, 18, 20. From B and C we can not find the numbers.

15. (d) The question can not be solved even using all the information together.

16. (b) A + B + C = 946

(A + C) = (946-B) ....(i)

From (B) B $= \frac{3}{19}(A + C)$

$B = \frac{3}{19}(946 - B)$ Form(i) and value of B can be found out.

17. (d) M = 5 + 6

From $(A) = \frac{(M+6)}{(5\_6)} = \frac{6}{5}$ using (i) with this we can find the ages opf Mohan and Sohan.

From (B) $M : S = 5 : 4$ using this with (i) we can Likewise from (c), respective ages of Mohan and Sohan can be found out.

18. (a) Let the two digit number be $(10\alpha + b)$

Given, $b = (a + 4)$ ...(i)

using (I) a + b = 10 ...(ii)

From (i) and (ii) we find a = 3 and b = 7, hence number is 37.

Using (II), we get

$(10a + b) - (10b + a) = 36$

or $9a - 9b = 36 \Rightarrow a - b = 4$

Value of a and b can not be foung out from $(a - b = 4)$ and $b = (a + 4)$

Hence only statement (i) is sufficient to answer the quwstions.

19. (d) Question can not be solved even using both the statements.

20. (b) From (II) it is very clear that newspaper y has the maximum circulation in Delhi.

21. (d) From I and II it is clear that what is the times period for which both Rekha and Nutan made their respective investment.

22. (d)

23. (a)

24. (b)

25. (c)

26. (c)

27. (c) From I $\Rightarrow$ Total marks $= \frac{2 \times 100}{4} = 50$

Pass marks $50 \times \frac{32}{100} + 1 = 17$

From (II) = Total marks $= \frac{5}{10} \times 100 = 50$

Pass marks = $50 \times \frac{30}{100} + 2 = 17$

28. (d)

29. (a) From I = Actual cost price is not Known.

From II = Total marks $= \frac{200 \times 115}{100} \times \frac{100}{90}$

= Rs. 255.55

30. (d)

31. (d)

32. (d) Average connot be calculated form column A.

33. (a) From (I) $6 : 10 = x : 9$ (where x is the height of pawan)

$\Rightarrow \quad x = \frac{6 \times 9}{10}$

Only (I) is sufficient to answer the question

34. (d) The distance between QP cannot be calculated even using both thestatements.

35. (c) Form (I) If the total populations is 100, then 28 families have a monthly income of over Rs. 25000 From above Rs. 25000 and own a house

Hence (I) and (II) both are requitred to solve the question.

36. (c) From (I) Mona + Vicky = 120 kg

From (II) Vicky = 2 Mona

From (I) and (II) 3 Mona = 120

$\Rightarrow$ Mona = 40 kg

37. (a) $\log_{70} 96 = \frac{log 96}{\log 70} = \frac{1}{\frac{\log 70}{\log 96}}$

$= \frac{1}{\log_{96} 70}$

Therefore value of $\log_{96} 70$ Should be known

Hence statement (I) is sufficient to answer the question.

38. (a) 7^{th} term = 729

The series of GP = 1, 3, 9, 27, 81, 243...

$\therefore$ Sum of 7 term of GP = $S_7 = \frac{a(r^n - 1)}{r - 1}$

$\therefore S_7 = \frac{1(3^7 - 1)}{3 - 1} = \frac{3^7 - 1}{2} = 1093$

39. (c) From (I) $y = t^3 - 4t^2 + 16t - 2$ ...(i)

From (II) velocity $v = \frac{dy}{dt} = 20$ ...(ii)

Acceleration $\frac{d^2y}{dt^2} = 6t - 8$

From (I) and (II) acceleration can be found.

40. (b) $A \cap (B \cap c) = (A \cap B) \cap (A \cap C)$

From (I) we can find $A \cap (B \cap c)$

41. (c) If y = 0 then $x > y$ and $x > 0$ which is not possible hence both the statements are required to answer the question.

42. (d) we cannot find the length QR from statement I and II

43. (b) From (II), total distance travelled

$= 3 \times 75 + 5 \times 45 = 450km$

44. (a) From (I) number of pages = 3

From (II), number of pages = 3 and 6

45. (b) From (II) we can answer the question the clock loose 960 seconds

46. (d) I : Block with at least two faces square can be eithera cube or a cibiod.

II. Block with a volume of 64 can be either a cube or a cuboid

47. (d) If we combine both the statement together we get so many values. between 4 and 6 whose cube is not equal to 125.

48. (c) From statement (I) and (II) the weight of third packet is 10 kg. Hence heaviest package is 25 kg.

49. (c) From (1) and (2)

$y + 2y = 3 \Rightarrow y = 1$

$\therefore \quad y = x = 1$

50. (c) From (1) and (2) $\frac{ps + qr}{qs} = \frac{2}{2} = 1$

Hence both the statements are needed to solve the queston.

51. (d) Distance from home to bus stop is not given hence time taken by her can not be calculated.

52. (a) From (I) it is known thet theaverage amount per deposit is Rs. 6500. Hence total amount deposited is Rs. 6500×5 = Rs. 32500. Hence (I) alone is sufficient.

53. (c) I : $\frac{3}{4}$ th students studied C++

II : $\frac{2}{3}$ rd students studied visual basic

(I + II) Those who studied both $\left(\frac{3}{4} + \frac{2}{3}\right) - 1 = \frac{5}{12}$

Hence both thestatements are required to answer the question

54. (c) From (I) we know that total marbles are divisible by 12.

From (II) we know that no of marbles divided by 12 and lying between 144 and 150 is 144. Hence with the help of both of statements we can find the answer.

55. (d) (none) using both thestatement alone.

we get $x > y$. Hence none of the options gives thecorrect answer.

56. (d) None of the statements either individually or jointly help to solve the question.

57. (c) Using both the statements together we get the values of x and y

Hence we can find $x + y$

58. (b) The question can be anwered using statement 2 individually (alone):

Statement I : If n is odd i.e. 1 then 2^n is not divisible by 8. But if n is 3 then 2^n is divisible by 8. Hence, we do not get answer form this.

statement II: If n >5 then for any value of $n > 5$ 2^n is divisible by 8. As

$$2^6 = 2^3 \times 2^3 = 2^3 \times 2^4$$

$$2^8 = 2^3 \times 2^5$$

Hence we get the answer using statement II alone.

59. (c) Using both the statement, we get $Op = \sqrt{13}$ (radius) and $OQ = \sqrt{17}$ (radius). Since $OP \neq OQ$. Hence P and Q do not lie on the same circle.

60. (c) Statement (I) $x^2 + 3x - 4 = 0$

$\Rightarrow x = -4$ and $x = 1$

Statement (II)

$x > -2$

Using (I) and (II) together we get $x = 1$

61. (a) **Statement (I) :**we know square of an odd integer is alwasy an odd number hence K is odd.

Statement (II): Even number of odd number multiplied by 2 is always an even number hence k may be either even or odd.

Therefore statement (I) alone is sufficient to answer the question.

62. (b) **Statement I:** 6 is divisible by 3 but by 9 Also 18 is divisible by 3 and also by 9. Hence question can not be answered from statement (I) alone

Statement II : If the number is divisible by 27 then it will dedinitely divisible by 9 as 27 is divisible by 9.

63. (d) We need three equations to find the values of x, y and z.

64. (a) **Statement I:** Let time from B to A is x hours then time from A to B is $1.25\,x$

$$1.25\,x + x = 4 \Rightarrow x = \frac{4}{2.25} \text{ hours}$$

Hence time from A to B can becalculated.

Statement II: Time from C to B is not given hence time from A to B cannot be calculated.

$\therefore$ Statement (I) alone is sufficient.

65. (d) x may euqal greater or smaller then y

66. (b) From statement (II) average yearly wage

$$= \frac{77,000,000}{7,000} = 11,000$$

67. (d) None of the statements conclude that all the sides are equal. Hence question can not be answered even using both the statements together

68. (d) Let incomes for the years 1988. 89 and 90 be Rs. x, Rs. y and Rs. z respectively.

(I): Then $x + y + z = 300000$ ... (i)

(II) : $y = 1.2x$ ...(ii)

Using (i) and (ii)

we get $x + 1.2x + z = 300000$

the value of z can not be determined

69. (c) Radius = 4 cm, $x^0 = 60^0$

Area of shaded portion

$$\frac{x}{360} \times \pi r^2 = \frac{60}{360} \times \pi (4)^2$$

$$= \frac{16}{6}\pi$$

Data Interpretation & Data Sufficiency

CONTENTS