1. Total Automobile Production is as follows:
   Year 2004: 800 + 500 + 475 = 1775
   Year 2005: 700 + 550 + 450 = 1700
   Year 2006: 1025 + 675 + 475 = 2175
   Year 2007: 1200 + 650 + 475 = 2325
   Year 2008: 1250 + 600 + 350 = 2200
   2005 and 2008 show a decrease in automobile production.

   Percentage decrease for 2005 $= \dfrac{1775 - 1700}{1775} \times 100$

   $= 4.23\%$

   Percentage decrease for 2008 $= \dfrac{2325 - 2200}{2325} \times 100$

   $= 5.38\%$

   Hence, **option 4**.

2. From the previous solution, we have total Automobile Production for the given years as follows:
   2004: 1775
   2005: 1700
   2006: 2175
   2007: 2325
   2008: 2200
   Now, domestic sales can be calculated as:
   Year 2004: 700 + 450 + 300 = 1450
   Year 2005: 675 + 500 + 350 = 1525
   Year 2006: 900 + 625 + 400 = 1925
   Year 2007: 1050 + 600 + 375 = 2025
   Year 2008: 975 + 550 + 350 = 1875
   Exports = Total Production – Domestic sales
   ∴ Exports for the given years:
   Year 2004 = 1775 – 1450 = 325
   Year 2005 = 1700 – 1525 = 175
   Year 2006 = 2175 – 1925 = 250
   Year 2007 = 2325 – 2025 = 300
   Year 2008 = 2200 – 1875 = 325
   ∴ Highest growth in exports was registered in the year 2006 = (250 – 175) = 75
   Hence, **option 2**.

3. Total domestic sale for the year 2004-2008:
   Commercial vehicles:
   450 + 500 + 625 + 600 + 550 = 2725
   Passenger vehicles:
   700 + 675 + 900 + 1050 + 975 = 4300
   Three wheelers:
   300 + 350 + 400 + 375 + 350 = 1775
   ∴ Ratio of the total sale price of commercial vehicles, passenger vehicles and three wheelers
   = (5 × 2725) : (3 × 4300) : (2 × 1775)

   ∴ Contribution of commercial vehicles to the overall earnings

   $= \dfrac{(5 \times 2725)}{(5 \times 2725) + (3 \times 4300) + (2 \times 1775)} \times 100 \approx 45\%$

   Hence, **option 1.**

4. Average domestic sales of automobiles:
   (1450 + 1525 + 1925 + 2025 + 1875) ÷ 5 = 1760
   The domestic sales in the year 2008 were closest to the average domestic sales.
   Hence, **option 4.**

5. From the solution of question 2, we have the sales as follows:
   Year 2004 = 1450
   Year 2005 = 1525
   Year 2006 = 1925
   Year 2007 = 2025
   Year 2008 = 1875
   Subtracting the sales from the previous years, we get increase in the sales for:
   Year 2005 = 75
   Year 2006 = 400
   Year 2007 = 100
   Year 2008 shows a decrease.
   2006 shows the highest increase, i.e. its percentage increase in the highest.
   Hence, **option 2.**

6. From the previous solutions;
   Increase in domestic sales over the preceding year:
   Year 2005 = 75
   Year 2006 = 400
   Year 2007 = 100
   Increase in production over the preceding year:
   Year 2006 = 475
   Year 2007 = 150
   Ratio for the year 2006 = 400 : 475 = 16 : 19
   Ratio for the year 2007 = 100 : 150 = 2 : 3
   Hence, **option 2.**

7. Returns for Alpha
   = (1.49 × 1.05) + (3.01 × 1.12) + (7.01 × 0.95)
   + (1.51 × 1.15) + (7.48 × 1.11) + (9.99 × 1.21)
   + (9.01 × 1.08) + (25.98 × 1.06) + (14.5 × 1.25)
   + (5.98 × 1.18) + (4.5 × 1.1) + (5.51 × 0.98)
   + (4.03 × 1.17)
   = 111.2383
   Similarly, returns for Beta = 107.2281
   and for Gama = 109.4837
   Hence, **option 1**.

8. Preparing a table to show the ranks:

Sectors	Ranks		
	Alpha	Beta	Gama
Automobile	13	8	14
Chemicals	11	10	7
Communication	6	9	8
Construction	12	14	6
Diversified	5	7	5
Energy	3	2	1
Engineering	4	3	3
Financial	1	1	2
FMCG	2	11	12
Health Care	7	14	11
Metals	14	3	4
Services	9	6	8
Technology	8	5	10
Textiles	10	14	14

From the table, we can conclude that only statement III is correct.
Hence, **option 4.**

9. Returns for Rs. 100 lakhs = Rs. 109.4837
∴ Returns for Rs. 10 lakhs ≈ Rs. 10.95lakhs.
Hence, **option 2**.

10. Jowar yield (2007) = 368/673
Soyabean yield (2008) = 799/650

Ratio $= \dfrac{368}{673} : \dfrac{799}{650} \approx 0.445$

From the given options,
1.00 : 2.10 ≈ 0.476
1.21 : 1.89 ≈ 0.64
0.89 : 2.00 = 0.445
0.78 : 1.61 ≈ 0.484
Hence, **option 3.**

11. Let us calculate the yield for the crops given in the options for the year 2006:
Castor Seed = 135/106 ≈ 1.27
Groundnut = 491/317 ≈ 1.55
Maize = 1102/1004 ≈ 1.1
Sunflower = 880/472 ≈ 1.86
Rice = 153/107 ≈ 1.43
Bajra = 2172/4992 ≈ 0.43
The top three crops by yield are Sunflower, Groundnut and Rice.
Hence, **option 2**.

12. Let us calculate the yield for the crops given in the options for the year 2008:
Moth = 250/1199 ≈ 0.21
Sesamum = 70/280 ≈ 0.25
Millets = 4/15 ≈ 0.27
Moong = 260/725 ≈ 0.36
Arhar = 9/19 ≈ 0.47
Urd = 35/102 ≈ 0.34
Chaula = 30/101 ≈ 0.30

The bottom three crops by yield are Moth, Sesamum and Millets.
Hence, **option 1.**

13. Total productivity has increased for some pulses and decreased for some.
∴ Statement I is incorrect.
Statements II and III are correct.
Hence, **option 3.**

14. On observing the table we see that,
The area under production of Cereals is approximately the same for the years 2006, 2007 and 2008 but the total quantity of production has increased.
∴ Over the period total cereal productivity has gone up.
∴ Statement I is correct.
Similarly on observing the table we can say that statement III is also correct.
Only statements I and III are correct.
Hence, **option 1.**

15. Total Oil Used
= House Hold + Transport + Industrial + Suburban
Total Oil Produced
= Total Oil Used + Oil Production Loss

Year	Total Oil Used	Total Oil Produced
1996	2608	3258
1997	2914	3646
1998	2870	3704
1999	2834	3936
2000	2920	3622
2001	3262	3754
2002	3658	4044
2003	3500	3944
2004	3822	4328
2005	3618	4650
2006	3826	4968
2007	4030	5484
2008	4152.2	5580.2

Now, Oil used for House Hold as a percentage of Total Oil Used:

During 1998 $= \dfrac{22}{2870} \times 100 \approx 0.77\%$

During 1999 $= \dfrac{22}{2834} \times 100 \approx 0.78\%$

During 2000 $= \dfrac{20}{2920} \times 100 \approx 0.68\%$

During 2001 $= \dfrac{22}{3262} \times 100 \approx 0.67\%$

It is highest during the year 1999.
Hence, **option 2.**

16. Using the table given in the previous solution, we can find the 'Oil Production loss' as a proportion of 'Total Oil Produced'
During 2002 = 386/4044 ≈ 0.095
During 2003 = 444/3944 ≈ 0.113

During 2004 = 506/4328 ≈ 0.117
During 2006 = 1142/4968 ≈ 0.230
Hence, **option 1.**

17. Again using the table given in the solution of the first question of the set,
During 2005 = 230/3618 ≈ 0.0636
During 2006 = 210/3826 ≈ 0.055
During 2007 = 254/4030 ≈ 0.063
During 2008 = 266/4152.2 ≈ 0.064
Hence, **option 4.**

18. Refer to the table given in solution 15.

Growth rate for 'Production of Oil':

Year 1997: (388/3258)×100 = 11.91%
Year 1998: (58/3646)×100 = 1.59%
Year 1999: (232/3704)×100 = 6.26%
Year 2000: −(314/3936)×100 = −7.98%
Year 2001: (132/3622)×100 = 3.64%
Year 2002: (290/3754)×100 = 7.73%
Year 2003: −(100/4044)×100 = −2.47%
Year 2004: (384/3944)×100 = 9.74%
Year 2005: (322/4328)×100 = 7.44%
Year 2006: (318/4650)×100 = 6.84%
Year 2007: (516/4968)×100 = 10.39%
Year 2008: (96.2/5484)×100 = 1.75%

Growth rate for 'Total Oil Used':

Year 1997: (306/2608)×100 = 11.73%
Year 1998: −(44/2914)×100 = −1.51%
Year 1999: −(36/2870)×100 = −1.25%
Year 2000: (86/2834)×100 = 3.03%
Year 2001: (342/2920)×100 = 11.71%
Year 2002: (396/3262)×100 = 12.14%
Year 2003: −(158/3658)×100 = −4.32%
Year 2004: (322/3500)×100 = 9.2%
Year 2005: −(204/3822)×100 = −5.34
Year 2006: (208/3618)×100 = 5.75%
Year 2007: (204/3826)×100 = 5.33%
Year 2008: (122.2/4030)×100 = 3.03%
The growth rate in 'Production of Oil' is more than that in 'Total Oil Used' during the years 1997, 1998, 1999, 2003, 2004, 2005, 2006 and 2007.
Hence, **option 4.**

19. On observing the data given in the question and the table in the solution to the first question of the set, we can conclude that the correct statement is D.
Hence, **option 4.**

20. It is given that the four houses Blue, Green, Red and Yellow are located in a row, From (VIII) we get that the house in which Krishna lives is located between houses with persons earning salaries of Rs. 30,000 and Rs. 50,000.
∴ Two cases are possible:

Case 1: Krishna lives in the Green house.

1. House	2. Person	3. Salary
4. Blue	5.	6.
7. Green	8. Krishna	9.
10. Red	11.	12.
13. Yellow	14.	15.

Case 2: Krishna lives in the Red house.

House	Person	Salary
Blue		
Green		
Red	Krishna	
Yellow		

Case 1: Krishna lives in the Green house.
From (I) we get that Paul lives between Som and Krishna.
∴ Som lives in the Yellow house and Paul lives in the Red house.
∴ Laxman lives in the Blue house.
From (VIII) we get that Krishna lives in the house which is located between houses with persons earning salaries of Rs. 30,000 and Rs. 50,000.
And from (III) we get that the person living in the Red house earns more than the person living in the Blue house.
∴ Paul earns Rs. 50,000 and Laxman earns Rs. 30,000.
From (VII) we get that the salary difference between Laxman and Som is Rs. 30,000 which is not possible in this case as the four given salaries are Rs. 30,000,
Rs. 50,000, Rs. 80,000 and Rs. 1,10,000.
∴ Case 1 is not possible.

Case 2: Krishna lives in the Red house.
From (I) we get that Paul lives between Som and Krishna.
∴ Som lives in the Blue house and Paul lives in the Green house.
∴ Laxman lives in the Yellow house.
In condition (VIII) it is given that Krishna lives in the house located between houses with persons earning Rs. 30,000 and Rs. 50,000.
And from (IX) we get that the person living in the Yellow house is not earning lowest salary among the four persons.
∴ Laxman earns Rs. 50,000 and Paul earns Rs. 30,000.
From (III) we get that the person living in the Red house earns more than the person living in the Blue house.
∴ Krishna earns Rs. 1,10,000 and Som earns Rs. 80,000.

House	Person	Salary
Blue	Som	Rs. 80,000
Green	Paul	Rs. 30,000
Red	Krishna	Rs. 1,10,000
Yellow	Laxman	Rs. 50,000

This case satisfies all the given conditions.
∴ Krishna lives in the Red house.
Hence, **option 2.**

21. From the final table given in the solution of the first question of the set we get that,
The person earning highest salary i.e Rs. 1,10,000 is Krishna and he lives in the Red house.
Hence, **option 3.**

22. The person living in the Green house is Paul and the salary earned by him is Rs. 30,000.
Hence, **option 1.**

23. From the directions given in the questions following diagram can be drawn:
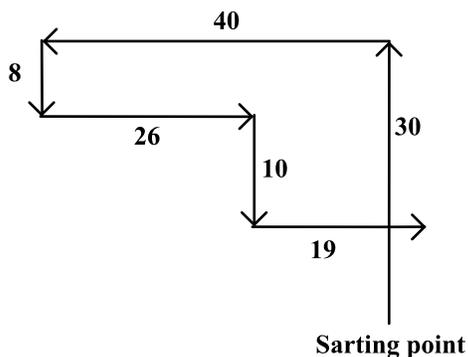
Sarting point

The distance between the Starting point and the final position of Mr. Raghav can be determined using Pythagoras theorem with the two sides as 12 and 5.
∴ Mr. Raghav is 13 kms to the North east of the starting point.
Hence, **option 3**.

24. It is given that Mr. Raju's father's mother, mother's father and their children were in one car.
∴ His paternal grandmother, maternal grandfather, Mother and Father were in the first car.
Mr. Raju's father's son, sister's husband and brother's wife were in the second car.
Raju's father's son has to be his brother as Raju himself was in the third car.
∴ Raju's brother, Brother-in-law (sister's husband) and sister-in-law (brother's wife) were in the second car.
Mr. Raju, his wife, wife's sister, wife's brother, son's wife with a kid were in the third car.
∴ Mr. Raju, his wife, sister-in-law (wife's sister), brother-in-law (wife's brother), son's wife and grandson were in the third car.
∴ Car 1: Paternal Grandmother, Maternal Grandfather, Mother and Father.
Car 2: Brother, Sister-in-law (brother's wife) and Brother-in-law (sister's husband).
Car 3: Raju, his wife, Sister-in-law (wife's sister), Brother-in-law (wife's brother), Son's wife and Grandson.
∴ 13 members of Raju's family were there in the picnic and 4 members i.e. Raju's Sister, his wife's brother-in-law, his wife's sister-in-law and his son were left behind.

Hence, **option 1.**

25. Data given in the question is not correct.
Let a, b, c, d and e be the number of cards with A, B, C, D and E.
If B gives A five cards, A will have as many cards as E.
∴ $e = a + 5$ ...(i)
If A gives B five cards, B will have as many cards as D.
∴ $d = b + 5$ ...(ii)
A and B together have 20 cards more than what D and E have together.
∴ $a + b = e + d + 20$ ...(iii)
It is also given that B has four cards more than what C has and the total number of cards are 201.
∴ $b = c + 4$ and ...(iv)
$a + b + c + d + e = 201$ ...(v)
Adding (i) and (ii) we get $e + d = a + b + 10$ which contradicts equation (iii)
∴ The data given in the question is not correct.

26. Music instructor takes session from 12 noon to 4:00 pm on Monday, Thursday and Sunday.
Sessions of dance instructor are scheduled between 10:00 am to 2:00 pm. on Tuesday, Thursday, Wednesday and Sunday.
Painting instructor takes sessions between 9:00 am to 12:00 noon on Tuesday, Friday and Thursday and between 2:00 pm to 4:00 pm on Wednesday, Saturday and Sunday.
∴ The dance and painting sessions are simultaneously held on days common to the sessions held by dance instructor between 10:00 am to 2:00 pm and the sessions held by the painting instructor between 9:00 am and 12:00 noon i.e. Tuesday and Thursday.
Hence, **option 3.**

27. As Abhijit already had two increments and during the given period he will get three increments.
Hence his salary on August 1, 2009
= $(37400 + 10000)(1.03)^5$
= Rs. 54949.5
≈ Rs. 54950
Hence, **option 3**.

28. Loss in total emoluments of Nitin
= 23635 × 1.58 – 21000 × 1.58
= Rs. 4163.3 ≈ Rs. 4164
Hence, **option 3**.

29. Sunitha's salary before the promotion
= $(15600 + 7600)(1.03)(1.58) + 3200$
≈ Rs. 49635
After the promotion it will be = $(46300)(1.58) + 3200$
= Rs. 76354
∴ The required percentage growth = $\left(\dfrac{76354}{49635} - 1\right) \times 100$
= 53.8%

By considering Rs. 3,200 additionally as mentioned in table, under Transport Allowance (TA) it will be

$$\left(\frac{79554}{52834} - 1\right) \times 100 = 50.5\%$$

Hence, **option 1 or 3.**

30. Arrears that Dinesh will get
= (3 × 6)% of 47689 + 8% of 49120
= 8584 + 3930
= Rs. 12514
The option closest to the correct answer is 12981.
Hence, **option 1.**

31. If we divide the given input into 5 groups with 2 words each then the groups can be written as:

Group 1: Smile Nile
Group 2: Style Mile
Group 3: Shine Wine
Group 4: Mine Swine
Group 5: Bovine Feline
Group numbers are given in the order in which they are given in that STEP.
Then the steps of rearrangement can be written as:

STEP 1: Position of group 4 is interchanged with position of group 5.
STEP 2: Position of group 1 in step 1 is interchanged with position of group 2.
STEP 3: Position of the words of group 3 in step 2 is interchanged.
STEP 4: Position of words of group 1, group 2, group 3 and group 5 are interchanged.

For example, if the words in group 1 in step 3 are Smile Nile then the words in group 1 of step 4 will be Nile Smile.

STEP 5: Position of group 1 is interchanged with position of group 2 and position of group 4 is interchanged with position of group 5.
STEP 6: Position of group 4 is interchanged with the position of group 5.
STEP 7: Position of group 1 is interchanged with the position of group 2.

∴ We can say that the algorithm of rearrangement repeats after 5 steps.

∴ STEP 8 for the given input will be:

STEP 8: Mile Style Nile Smile Shine Wine Feline Bovine Swine Mine
STEP 9: Style Mile Smile Nile Shine Wine Bovine Feline Mine Swine
STEP 10: Smile Nile Style Mile Shine Wine Mine Swine Bovine Feline
STEP 11: Smile Nile Style Mile Shine Wine Bovine Feline Mine Swine
STEP 12: Style Mile Smile Nile Shine Wine Bovine Feline Mine Swine
STEP 13: Style Mile Smile Nile Wine Shine Bovine Feline Mine Swine
STEP 14: Mile Style Nile Smile Wine Shine Feline Bovine Swine Mine

STEP 15: Nile Smile Mile Style Wine Shine Swine Mine Feline Bovine
STEP 16: Nile Smile Mile Style Wine Shine Feline Bovine Swine Mine
STEP 17: Mile Style Nile Smile Wine Shine Feline Bovine Swine Mine
STEP 18: Mile Style Nile Smile Shine Wine Feline Bovine Swine Mine
STEP 19: Style Mile Smile Nile Shine Wine Bovine Feline Mine Swine
STEP 20: Smile Nile Style Mile Shine Wine Mine Swine Bovine Feline

∴ **STEP 14** for the given input is
Mile Style Nile Smile Wine Shine Feline Bovine Swine Mine
No option is matching with the **STEP 14** but the closest option is option C which should have had Wine Shine instead of Shine Wine.
Hence, **option 3.**

32. Referring the Steps given in the solution to the previous question we get that,
Option A is step 13.
Option B is step 14.
Option C is step 12.
Option D does not fall between step numbers 12 and 14.
Hence, **option 4**.

33. Referring the solution to the first question of this set, we get that **STEP 20** is same as the given input.
Hence, **option 3.**

34. If the liking of a person is denoted by ✓ and whatever a person hates is denoted by × then the data given can be represented in a tabular format as:

	Travelling	Sightseeing	River rafting	Squash	Trekking
C1	✓	✓	×		
C2	×	✓		✓	
C3		×	✓		
C4				×	✓
C5		×		✓	×
C6	✓	×			×
C7	×		✓		✓
C8		✓	✓		×

Now, each selected member should share a liking with at least one of the other three selected members and the selected member must also hate at least one of the likings of any of the other persons selected.

Consider option A:
C1, C2, C5 and C6 cannot be the four people selected by the Prime Minister as C1 hates only River rafting which is not liked by any of the other three.

Consider option B:
C3, C4, C5 and C6 cannot be the four people selected by the Prime Minister as none of them shares a liking with any other member, also C3 and C6 hate Sightseeing which is not liked by any of them.

Consider option C:
C1, C2, C4 and C7 are the four people selected by the Prime Minister as all of them share at least one liking with at least one of the three selected members and all of them also hate at least one of the likings of at least one of the selected persons.
Hence, **option 3.**

35. Arcelor, acquired by Mittal steel, was formed by the merger of Arbed, Aceralia and Usinor.
Hence, **option 3**.

36. The correct author-book match is shown below:

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

Hence, **option 1**.

37. The company Fem Care Pharma Limited, the manufacturer of Fem Bleach, was acquired by Dabur India Limited.
Hence, **option 4.**

38. The correct Stock Index – Country match is shown below:

STOCK INDEX	COUNTRY
a. HANG SENG	iii. Hong Kong
b. NASDAQ	i. United States
c. FTSE	iv. United Kingdom
d. KOSPI	ii. South Korea

Hence, **option 2.**

39. The correct Legal Act and Jurisdiction match is shown below:

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

Hence, **option 1.**

40. The correct President, Country and Currency match is shown below:

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

Hence, **option 3.**

41. The wrong explanations of the abbreviations are as follows:

b. UNCED:	ii. UN Conference on Education and Development
c. TAFTA:	iii. Trans-Atlantic Financial Trade Agreement
e. PFRDA:	v. Pension Fund Reporting and Development Authority
i. ASSOCHAM:	ix. Association chamber of Commerce Trade and industry

Hence, **option 1.**

42. Ketan Parekh was not nominated by the Government of India on the board of Satyam Computer Services.
Hence, **option 2.**

43. CDS stands for Credit Default Swap.
Hence, **option 3.**

44. The correct Company and Bran match is shown below:

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

Hence, **option 3.**

45. The correct Company and Slogan match is shown below:

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

Hence, **option 3.**

46. Mauritius, Singapore and USA were the top three investing countries in terms of FDI inflows, in the financial year 2008-09.
Hence, **option 2.**

47. Negative inflation is also called Deflation.
Hence, **option 2.**

48. The co-founders of Google are Sergey Brin and Larry Page.
Hence, **option 3.**

49. National Hydroelectric Power Corporation limited (NHPC) does not fall in the category of 'Navratna' PSUs.
Hence, **option 4.**

50. Statement D is not related to the concept of carbon credits.
Hence, **option 4.**

51. India signed the Kyoto Protocol in the year 2002.
Hence, **option 3.**

52. The correct match is shown below:

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

Hence, **option 2.**

53. The correct match is shown below:

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

Hence, **option 3.**

54. The correct match is shown below:

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

Hence, **option 1.**

55. Rate of consumption of diesel when speed = x kmph

$$= \frac{1}{400}\left(\frac{100}{x} + x\right) \text{litres/km}$$

Diesel cost = Rs. 35 per litre
Driver is paid Rs. 125 per hour
Distance of 800 km

$$\therefore \text{Total cost} = \left(\frac{800}{x}\right)125 + \frac{1}{400}\left(\frac{100}{x} + x\right) \times 35 \times 800$$

$$= 800\left[\frac{125}{x} + \frac{1000 + x^2}{400x} \times 35\right]$$

$$= \frac{170000 + 70x^2}{x}$$

Substituting the options in this, we find that $x = 49$ gives the minimum cost of Rs. 6899.38
Hence, **option 1.**

56. Anil and Sunil meet every time Anil gains a round over Sunil.
When Sunil completes one round of the track of length, say d, in 2 minutes, Anil meets Sunil every

$$\frac{d}{d - \frac{d}{2}} = 2 \text{ minutes}$$

$\therefore$ Anil meets Sunil 2/2 = 1 time in his first round.
When Sunil completes one round of the track of length, say d, in 2^n minutes, Anil meets Sunil every

$$\frac{d}{d - \frac{d}{2^n}} = \frac{2^n}{2^n - 1} \text{ minutes}$$

$\therefore$ Anil meets Sunil $\dfrac{\frac{2^n}{2^n}}{\frac{2^n}{2^n - 1}}$

$= 2^n - 1$ times in his n^{th} round.
$\therefore$ Anil meets Sunil $2^7 - 1 = 127$ times in the 7th round and $2^8 - 1 = 255$ times in the 8th round.
$\therefore$ They will meet $127 + 255 = 382$ times between the 6th and 9th rounds.
Hence, **option 3.**

57.

$$S = \sum_{i=0}^{\infty} \frac{1}{(2i + 1)(2i + 2)(2i + 3)}$$

$$= \frac{1}{2}\sum_{i=0}^{\infty} \frac{(2i + 3) - (2i + 1)}{(2i + 1)(2i + 2)(2i + 3)}$$

$$= \frac{1}{2}\sum_{i=0}^{\infty}\left(\frac{1}{(2i + 1)(2i + 2)} - \frac{1}{(2i + 2)(2i + 3)}\right)$$

$$= \frac{1}{2}\sum_{i=0}^{\infty}\left(\frac{1}{2i + 1} - \frac{2}{2i + 2} + \frac{1}{2i + 3}\right)$$

$$= \frac{1}{2}\sum_{i=0}^{\infty}\left(\frac{1}{2i + 1} + \frac{1}{2i + 3}\right)$$

$$- \sum_{i=0}^{\infty}\left(\frac{1}{2i + 2}\right) \qquad \text{... (i)}$$

Now, $\dfrac{1}{2}\sum_{i=0}^{\infty}\left(\dfrac{1}{2i + 1} + \dfrac{1}{2i + 3}\right)$

$$= \frac{1}{2}\left(\frac{1}{1} + \frac{1}{3} + \frac{1}{3} + \frac{1}{5} + \frac{1}{5} + \frac{1}{7} + \frac{1}{7} + \cdots\right)$$

$$= \frac{1}{2}\left(1 + 2\left(\frac{1}{3} + \frac{1}{5} + \frac{1}{7} + \cdots\right)\right)$$

$$= \frac{1}{2}\left(2\left(\frac{1}{1} + \frac{1}{3} + \frac{1}{5} + \frac{1}{7} + \cdots\right) - 1\right)$$

$$= \left(\frac{1}{1} + \frac{1}{3} + \frac{1}{5} + \frac{1}{7} + \cdots\right) - \frac{1}{2}$$

$$= -\frac{1}{2} + \sum_{i=0}^{\infty}\left(\frac{1}{2i + 1}\right) \qquad \text{... (ii)}$$

From (i) and (ii), we get,

$$S = -\frac{1}{2} + \sum_{i=0}^{\infty}\left(\frac{1}{2i + 1} - \frac{1}{2i + 2}\right)$$

$$= -\frac{1}{2} + \left(\frac{1}{1} - \frac{1}{2} + \frac{1}{3} - \frac{1}{4} + \frac{1}{5} - \frac{1}{6} + \cdots\right)$$

$$= -\frac{1}{2} + \sum_{i=1}^{\infty} (-1)^{(i-1)} \frac{1}{i} \qquad \ldots \text{(iii)}$$

Now, we know that,

$$\log_e(1 + x) = x - \frac{1}{2}x^2 + \frac{1}{3}x^3 - \frac{1}{4}x^4 + \cdots$$

$$= \sum_{x=1}^{\infty} (-1)^{n-1} \frac{1}{n} x^n$$

Putting x = 1 in the above equation, we get,

$$\log_e 2 = \sum_{i=1}^{\infty} (-1)^{(i-1)} \frac{1}{i} \qquad \ldots \text{(iv)}$$

From (iii) and (iv), we get,

$$S = \log_e 2 - \frac{1}{2}$$

Hence, option 4.

Alternatively,
You can also solve this question using options.

$$\frac{1}{1.2.3} + \frac{1}{3.4.5} + \frac{1}{5.6.7} + \cdots = \frac{1}{6} + \frac{1}{60} + \frac{1}{210} + \cdots$$

$$= 0.167 + 0.0167 + 0.0047 + \ldots$$
$$< 0.2 \text{ but always positive}$$

So, value of S will always be less than 0.2.
Now, we will consider all the given options one by one.
Consider option 1.
$e^2 – 1 = (2.718)^2 – 1 > 0.2$
So, option 1 can be eliminated.
Consider option 2.
$\log_e 2 – 1 = 0.693 – 1 < 0$
So, option 2 can be eliminated.
Consider option 3.
$2\log_{10} 2 – 1 = 2(0.3010) – 1 < 0$
So, option 3 can be eliminated.
So, the correct answer will be option 4.
Hence, option 4.

58.
$$\log_2 x . \log_{\frac{x}{64}} 2 = \log_{\frac{x}{16}} 2$$

$$\therefore \frac{\log x}{\log 2} \times \frac{\log 2}{\log\left(\frac{x}{64}\right)} = \frac{\log 2}{\log\left(\frac{x}{16}\right)}$$

$$\therefore \frac{\log x \times \log\left(\frac{x}{16}\right)}{\log \frac{x}{64}} = \log 2$$

$$\therefore (\log x) \times \frac{(\log x - \log 16)}{(\log x - \log 64)} = \log 2$$

Let $\log x = t$

$$\therefore \frac{t(t - \log 16)}{t - \log 64} = \log 2$$

$\therefore t^2 - t \log 16 = t \log 2 - \log 2 . \log 64$
$\therefore t^2 - 4t \log 2 = t \log 2 - 6(\log 2)^2$
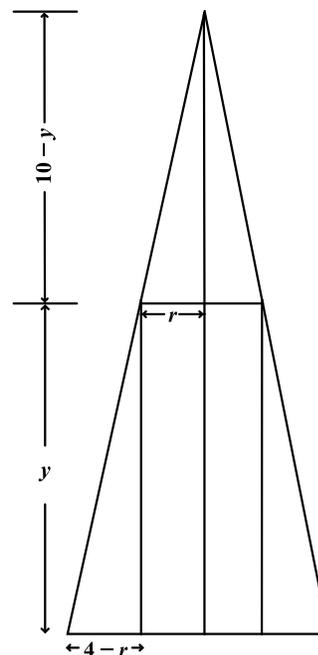$\therefore t^2 - 5t \log 2 + 6(\log 2)^2 = 0$
$\therefore (t - 2\log 2)(t - 3\log 2) = 0$
$\therefore t = \log 4 \text{ or } t = \log 8$
$\therefore x = 4 \text{ or } x = 8$
Hence, **option 2.**

59.

Using similarity of triangles,

$$\frac{10 - y}{r} = \frac{10}{4}$$

$\therefore y = 10 - 2.5r$
As r is the radius of the cylinder having the largest surface area,
The surface area = $2\pi r h$
$$= 2\pi r(10 - 2.5r)$$
$$= 5\pi r(4 - r)$$
Hence, **option 2.**

60. Curved surface area of a sphere = $4\pi r^2$

$$\frac{dr}{dt} = 2 \frac{cm}{sec}$$

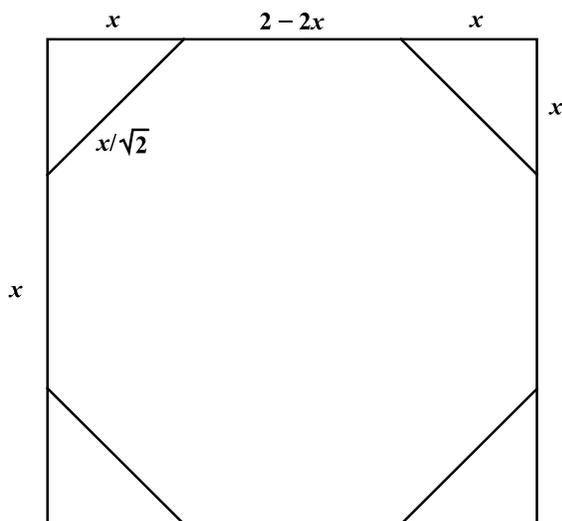$$\therefore \frac{d}{dt}(4\pi r^2) = 4 \times \pi \times 2 \times r \times \frac{dr}{dt}$$

$$= 8\pi \times 30 \times 2$$
$$= 480\pi$$
$\therefore$ Curved surface area of the balloon increases by
480π cm^2 per second.
Hence, **option 2.**

61. Refer to the following figure.

As all the sides of the figure are equal,

$2 - 2x = x\sqrt{2}$

$\therefore x = \dfrac{\sqrt{2}}{1 + \sqrt{2}}$

$= 2 - \sqrt{2}$ ... (rationalising the denominator)

Area of the eight sided figure

= Area of the square – 4 × Area of each small triangle

$= 2 \times 2 - 4 \times \dfrac{1}{2}\left(2 - \sqrt{2}\right)^2$

$= 4 - 2\left(6 - 4\sqrt{2}\right)$

$= 8\left(\sqrt{2} - 1\right)$

$= \dfrac{8}{\sqrt{2} + 1}$ ... (mutiplying and dividing by $(\sqrt{2} + 1)$)

Hence, **option 4.**

62. If Rashid's savings fill his deficit for n months,

$60000 = \dfrac{n}{2}[4000 + (n - 1)500]$

$\therefore n^2 + 7n - 240 = 0$

$\therefore n \approx 12.38$

$\therefore$ Rashid savings last for 12 months, after which he has to start borrowing from the 13th month.

Hence, **option 4.**

63. All the terms in the expansion of $(X + Y + Z + W)^{30}$ are of the form $k.X^a.Y^b.Z^c.W^d$

Where $a + b + c + d = 30$

$\therefore$ The number of terms in the expansion is equal to the number of positive integer solutions of the equation

$a + b + c + d = 30$

The number of solutions of this equation is given by

$^{n + r - 1}C_{r - 1}$, where $n = 30$, $r = 4$

$\therefore$ Number of solutions = $^{33}C_3 = 5456$

Hence, **option 2.**

64. X, Y and Z are events such that

X is the event that the card drawn is black or a king.

Y is the event that the card drawn is a club or a heart or a jack.

Z is the event that the card drawn is an ace or a diamond or a queen.

Consider X.

A black card can be drawn in 26 ways. A king can be drawn in 4 ways. A black king can be drawn in 2 ways.

$\therefore P(X) = \dfrac{26}{52} + \dfrac{4}{52} - \dfrac{2}{52}$

$\therefore P(X) = \dfrac{28}{52}$

Consider Y.

A club can be drawn in 13 ways. A heart can be drawn in 13 ways. A jack can be drawn in 4 ways. A Jack of hearts can be drawn in 1 way and a jack of club can be drawn in 1 way.

$\therefore P(X) = \dfrac{13}{52} + \dfrac{13}{52} + \dfrac{4}{52} - \dfrac{1}{52} - \dfrac{1}{52}$

$\therefore P(Y) = \dfrac{28}{52}$

Consider Z.

An ace can be drawn in 4 ways. A queen can be drawn in 4 ways and a diamond can be drawn in 13 ways. Queen of Diamonds can be drawn in 1 way and ace of diamonds can be drawn in 1 way.
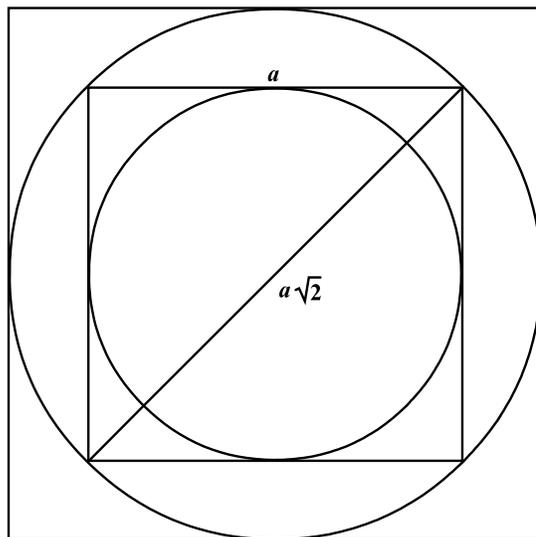
$\therefore P(Z) = \dfrac{4}{52} + \dfrac{4}{52} + \dfrac{13}{52} - \dfrac{1}{52} - \dfrac{1}{52}$

$\therefore P(Z) = \dfrac{19}{52}$

$\therefore P(X) = P(Y) > P(Z)$

Hence, **option 3.**

65.

Area of square 1 = a^2

Area of circle 1 = $\pi\left(\dfrac{a}{\sqrt{2}}\right)^2$

$\therefore D_1 = \dfrac{a^2}{2}(\pi - 2)$

Area of square 2 = $\left(a\sqrt{2}\right)^2$

Area of circle 2 = πa^2
$$\therefore D_2 = a^2(\pi - 2)$$
Similarly,
$D_3 = 2a^2(\pi - 2)$, and so on.
$$\therefore D_1 + D_2 + D_3 + \cdots$$
$$= a^2(\pi - 2)[0.5 + 1 + 2 + 4 + \cdots]$$
= Infinite
Hence, **option 3.**

66. Let, the probability of government investigation be p.
There are 4 cases:

Case	(A) Gamma being able to import the technology	(B) Government investigation	If (A) and (B), Alpha get the contract	Overall Probability
1	Yes (Probability = 0.8)	No (Probability = $1 - p$)	Probability = 0.67	$0.8 \times (1 - p) \times 0.67$
2	No (Probability = 0.2)	Yes (Probability = p)	Probability = 0.72	$0.2 \times p \times 0.72$
3	Yes (Probability = 0.8)	Yes (Probability = p)	Probability = 0.58	$0.8 \times p \times 0.58$
4	No (Probability = 0.2)	No (Probability = $1 - p$)	Probability = 0.85	$0.2 \times (1 - p) \times 0.85$

$\therefore$ Probability of contract being awarded to Alpha
= $[0.8 \times (1 - p) \times 0.67] + [0.2 \times p \times 0.72] + [0.8 \times p \times 0.58]$
$+ [0.2 \times (1 - p) \times 0.85] \geq 0.65$
$\therefore [0.536 \times (1 - p)] + [0.144 \times p]$
$+ [0.464 \times p]$
$+ [0.17 \times (1 - p)] \geq 0.65$
$\therefore p[0.144 + 0.464 - 0.536 - 0.17] \geq 0.65 - 0.536 - 0.17$
$\therefore p[-0.098] \geq -0.056$
$\therefore p[0.098] \leq 0.056$
$\therefore p \leq 0.056/0.098$
$\therefore p \leq 0.5714$
Hence, **option 2.**

67. Aditya, Vedus and Yuvraj do (1/6), (1/9) and (1/12) of the work respectively in a week. Let the total time taken to complete the work be n weeks.
Then,
$$2\left(\frac{1}{6}\right) + (n - 1)\left(\frac{1}{9}\right) + n\left(\frac{1}{12}\right) = 1$$
$$\therefore \frac{12 + 4(n - 1) + 3n}{36} = 1$$
$\therefore n = 4$
Hence, **option 1.**

68.

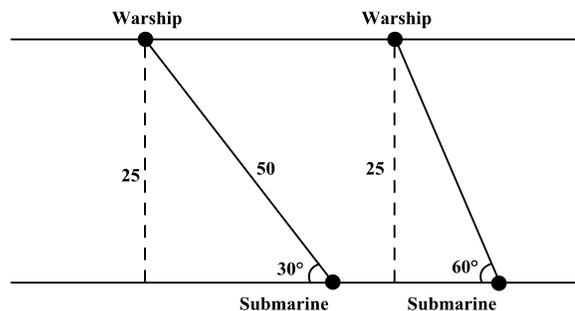| Year	Number of Shares
2006	650
2007	$650 + \dfrac{650}{13} \times 3 = 800$
2008	$800 + \dfrac{800}{4} \times 2 = 1200$

$\therefore$ Dividend in 2009 = $1200 \times 12.5 \times \dfrac{10}{100} = 1500$

$\therefore$ Dividend as a percentage of initial investment

$= \dfrac{1500}{6500} \times 100 = 23\%$
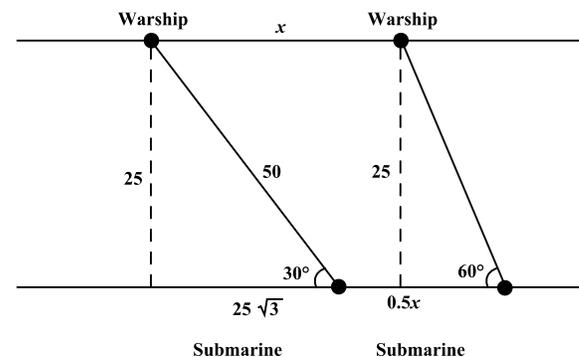Hence, **option 4.**

69. Refer to the following figure:

The vertical distance between the warship and the submarine = 25 km
$\therefore$ When the angle of depression of the submarine is 60°, the distance between the warship and the submarine is

$$\frac{25}{\sin 60°} = \frac{50}{\sqrt{3}} \text{ km}$$

Hence, **option 1.**

70. Let the speed of the submarine be x kmph.
Then the speed of the warship is $2x$ kmph.
Distance travelled by the warship in 30 minutes = x km
Distance travelled by the submarine in 30 minutes
= $0.5x$ km

From the figure,
$$x = 25\sqrt{3} + 0.5x - \frac{25}{\sqrt{3}}$$
$$\therefore 0.5\sqrt{3}x = 50$$
$$\therefore x = \frac{100}{\sqrt{3}} \text{ kmph}$$

$\therefore$ The speed of the warship = $\dfrac{200}{\sqrt{3}}$ kmph.

Hence, **option 4.**

71. Let Kartik initially have x, y and z, 1 Rupee, 2 Rupee and 5 Rupee coins respectively.
At the grocery shop, the number of 5 Rupee coins becomes $z/2$ and the number of 1 rupee coins becomes $x + z/2$

At the dairy, the number of 5 Rupee coins changes to $z/2 + 30$

By conditions given in the question,

$z/2 + 30 = 1.75z$

$\therefore z = 24$

Also, $x + z/2 = 50$

$\therefore x = 38$

Hence, **option 4.**

72. Sukriti runs 1 km in 5 minutes and 50 seconds
= 350 seconds.

Saloni runs 1 km in 6 minutes and 4 seconds
= 364 seconds.

$\therefore$ Sukriti runs 5 km in $5 \times 350 = 1750$ seconds

Saloni runs a distance of $\dfrac{1750}{364} \approx 4.8$ km in this time.

$\therefore$ Sukriti will win the mini marathon by 5 – 4.8

= 0.2 km = 200 m

Hence, **option 2.**

73.

Area of shaded pentagon $= \dfrac{5}{4}\left(\sqrt{1 + \dfrac{2}{\sqrt{5}}}\right)a^2$

Area of 5, unshaded equilateral triangles $= 5 \times \dfrac{\sqrt{3}}{4}a^2$

$\therefore$ Ratio of shaded area to unshaded area

$= \dfrac{\dfrac{5}{4}\left(\sqrt{1 + \dfrac{2}{\sqrt{5}}}\right)a^2}{5 \times \dfrac{\sqrt{3}}{4}a^2} = \sqrt{\dfrac{1}{3} + \dfrac{2}{3\sqrt{5}}}$

None of the option is right.

Hence, **option 4.**

74.

Time required by P1 and P2 to fill the tank $= \dfrac{8 \times 12}{8 + 12}$

$= \dfrac{24}{5}$ hrs.

$\therefore$ Time required by P1 and P2 to fill half the tank

$= \dfrac{12}{5}$ hrs.

The remaining half of the tank will be filled by P1 and P2 along with P3 with the rate of P2 only, because P3 will empty the tank with the rate of P1.

$\therefore$ Time required to fill the remaining half of the tank
= 12/2 = 6 hrs.

$\therefore$ Time after which supervisor return as per the plan

$= \dfrac{12}{5} + 6 = \dfrac{42}{5}$ hrs

Time required by P1 and P2 to fill $\dfrac{1}{3}^{\text{rd}}$ of the tank

$= \dfrac{8}{5}$ hrs

Time required to fill the remaining $\dfrac{2}{3}^{\text{rd}}$ of the tank (rate of P2)

$= 12 \times \dfrac{2}{3} = 8$ hrs

$\therefore$ Time after which tank will be full $= \dfrac{8}{5} + 8 = \dfrac{48}{5}$ hrs

$\therefore$ Difference in time $= \dfrac{48}{5} - \dfrac{42}{5} = \dfrac{6}{5}$ hrs

With the rate of P2 (i.e. in 12 hrs.), 1 tank can be filled.

$\therefore$ In $\dfrac{6}{5}$ hrs the part of the tank still remaining empty

$= \dfrac{6}{5} \times \dfrac{1}{12} = \dfrac{1}{10} = 10\%$

Hence, **option 3.**

75. The distance traversed by the ball is

$45 + 2 \times \dfrac{3}{5}(45) + 2 \times \dfrac{3}{5}\left(\dfrac{3}{5}(45)\right)$

$+ 2 \times \dfrac{3}{5}\left(\dfrac{3}{5}\left(\dfrac{3}{5}(45)\right)\right) + \dots$

$= 45 + 2 \times 45\left[\dfrac{3}{5} + \left(\dfrac{3}{5}\right)^2 + \left(\dfrac{3}{5}\right)^3 + \dots\right]$

$= 45 + 2 \times 45\left[\dfrac{\dfrac{3}{5}}{1 - \dfrac{3}{5}}\right]$

= 180 m

Hence, **option 2.**

76.

$\dfrac{\text{Quantity of petrol remaining after } n^{\text{th}} \text{ replacement}}{\text{Total Quantity}}$

$= \left(\dfrac{x - y}{x}\right)^n$

where x is the original quantity,

y is the quantity that is replaced, and

n is the number of times the replacement process is repeated.

$\therefore$ At the end of 6 replacements, each litre contains

$\left(\dfrac{400 - 40}{400}\right)^6 = \left(\dfrac{360}{400}\right)^6 = (0.9)^6 \approx 0.53$ litres of petrol

$\therefore$ The customer who purchases 40 litres of petrol gets 40 × 0.53 ≈ 21.2 litres of pure petrol.

Hence, **option 2.**

77. Probability that patients who have been prescribed only drug D1 have a heart attack = 0.8 × 0.65 = 0.52

$\therefore 0.52 \times 50 = 26$ of these will have a heart attack.

Probability that patients who have been prescribed only drug D2 have a heart attack = 0.8 × 0.8 = 0.64

$\therefore 0.64 \times 50 = 32$ of these will have a heart attack.

Probability that patients who have been prescribed both drugs D1 and D2 have a heart attack

= 0.8 × 0.65 × 0.8 = 0.416

$\therefore 0.416 \times 100 = 41.6$ of these will have a heart attack.

$\therefore$ Required Probability

= 41.6/(26 + 32 + 41.6) = 0.417 ≈ 0.42

Hence, **option 1.**

78. Total sales this year

= 193.8 + 79.3 + 57.5 = Rs. 330.6 lakhs

Expected sales next year

= 193.08 × 1.0725 + 79.3 × 1.082 + 57.5 × 1.0715

≈ Rs. 355.26 lakhs

∴ Expected sales growth

$$= \frac{355.26 - 330.6}{330.6} \times 100$$

= 7.46%

Hence, **option 1.**

79.

Purchase Price	Rate of decrease over previous month
3000	
2750	$\frac{3000 - 2750}{3000} \times 100 = 8.33\%$
2500	$\frac{2750 - 2500}{2750} \times 100 = 9.09\%$
2400	$\frac{2500 - 2400}{2500} \times 100 = 4\%$
2250	$\frac{2400 - 2250}{2400} = 6.25\%$

∴ Average rate of decrease $= \dfrac{8.33 + 0.09 + 4 + 6.25}{4}$

$= 6.91\%$

Hence, **option 3.**

80. Let $P = (1 - x^2 + x^3)(1 + x)^{10}$

The terms containing x^7, x^5 and x^4 in the expansion of $(1 + x)^{10}$ give terms containing x^7 in the expression of P.

The rth term in the Binomial Expansion of $(a + b)^n$ is given by

$T_r = {}^nC_{r-1} \, a^{(n-r-1)}b^{(r-1)}$

∴ The term containing x^7 is given by

$T_8 = {}^{10}C_7 \, x^7$

The term containing x^5 is given by

$T_6 = {}^{10}C_5 x^5$

The term containing x^4 is given by

$T_5 = {}^{10}C_4 x^4$

∴ $P = (1 - x^2 + x^3)({}^{10}C_7 \, x^7 + \ldots + {}^{10}C_5 x^5 + {}^{10}C_4 x^4 + \ldots)$

∴ The coefficient of the term containing x^7

$= {}^{10}C_7 - {}^{10}C_5 + {}^{10}C_4$

$= 120 - 252 + 210 = 78$

Hence, **option 2.**

81. Area of a sector of a circle with radius r having central angle x^c is given by

$A = \dfrac{1}{2}r^2x$

The length of the corresponding arc $= rx$

By the conditions given in the question,

$\dfrac{1}{2}r^2x = r^2x^2$

∴ $x = 0.5$

Hence, **option 1.**

82. A square is a cyclic quadrilateral. So we can find the answer using a square.

The area of a square with side x is x^2

The area of a square with side $3x$ is $9x^2$

∴ The percentage increase in area when all sides increase three fold = 800%.

Hence, **option 4.**

83. Statement I is mentioned in the first paragraph - "*Unfortunately very often directors are chosen on basis of friendship and sadly pliability*".

Statement II is found in the third paragraph which states that independent directors need to be trained in their roles and responsibilities.

Statement III is incorrect. Rather, it is contrary to the view taken by the author.

Statement IV is mentioned in the second paragraph which states that stringent standards need to be put in place for the independence of directors.

Option 4 mentions Statements I, II and IV as correct statements.

Hence, the correct answer is **option 4.**

84. The central theme of the passage is on the increased role and importance of independent directors - thus making option 1 incorrect.

Option 3 is incorrect because the passage states that audit firms should not be hired for other services in order to avoid conflict and enable a truly independent opinion.

Option 4 is incorrect because paragraph 10 states that all related-party transactions should require the approval of the audit committee, the full board and the shareholders to ensure effective governance.

Option 2 is correct because increased compensation to independent directors has no impact on effective corporate governance.

Hence, the correct answer is **option 2.**

85. Statement II is incorrect as paragraph 12 states explicitly that an independent body should oversee the functioning of auditors.

Statement IV is completely out of context and is incorrect.

Statement I is correct as paragraph 11 states that accounting standards should keep pace with the dynamic business environment.

Statement III is correct as stated in paragraph 13. The CEO and CFO should certify annual and quarterly reports.

Hence the correct answer is **option 3.**

86. Option 1 would help to improve the accountability of management as states in the passage.

Option 2 would also help improve accountability as the passage recommends rotating auditing partners.

Option 4 helps improve accountability as is mentioned in paragraph 9.

Option 3 will not help in improving accountability of management to shareholders as their vested interests may cause them to practise unfair tactics.

Hence, the correct answer is **option 3.**

87. Option 1 is incorrect and is advocated throughout the passage.

Option 2 is incorrect and is also the focus of the passage.

Option 3 is incorrect and is stated explicitly in paragraphs 11 and 12.

Option 4 is correct as it is nowhere mentioned in the passage.

Hence, the correct answer is **option 4.**

88. Option 1 is in the first paragraph - "The trade cycle is best regarded by a cyclic change in the marginal efficiency of capital".

Option 3 is in the second paragraph - "There is some recognizable degree of regularity in the time sequence and duration of upward and downward movements".

Option 4 is incorrect because it is stated in paragraph 2 in the definition of a cyclic movement that the cyclical movement is caused by the economic forces working in opposite direction.

Option 2 is correct as it is contradictory to the information provided in paragraph 2.

Hence, the correct answer is **option 2.**

89. The first few lines of paragraph 3 state that marginal efficiency of capital depends on existing abundance or scarcity of capital goods, the cost of production of capital goods and the current expectation as to the future yield of capital goods.

As a result, options 1, 2 and 3 are eliminated.

Hence, the correct answer is **option 4.**

90. Statements I, II and III are correct as they are explicitly mentioned in the explanation of a crisis in paragraph 2.

Statement IV is incorrect as it is completely out of context with regards to the passage.

Hence, the correct answer is **option 2.**

91. Greenhouse gases are one reason for global warming. However, statement I goes quite beyond the scope of the passage, eliminating it.

Statement II is incorrect as methane is twenty one times stronger in heat trapping than CO_2 (Paragraph eight).

Statement III is stated in the passage.

Statement IV is stated in paragraph 9 as one of the biggest factors contributing to the emission of green house gases.

Hence, the correct answer is **option 4.**

92. Option 1 is stated in the entire passage.

Option 2 is implied from the statement in the passage that deforestation is responsible for more CO_2 than fuel emissions (Paragraph 7).

Option 3 is mentioned in the last paragraph of the passage.

Option 4 is an incorrect statement since the ninth paragraph talks about shift in global temperature seen from the 11th to the 20th century.

Hence, the correct answer is **option 4.**

93. Statement I is incorrect because the industrial revolution decreased manual intervention rather than increased it (Paragraph 1).

Statement II is stated throughout the passage as one of the leading causes of global warming. Mechanization of production brought about by the industrial revolution is said to have released green house gases into the environment thereby being responsible for the increasing warming of the earth.

Statement III is stated in the passage as a primary reason for the increasing warming of the earth.

Statement IV is also stated in the third paragraph where Rochelle Lofkowitz distinguishes between 'fuels from hell' and 'fuels from heaven'.

Hence, the correct answer is **option 4.**

94. "Fuels from heaven" are said to be those which come from above the ground, are endlessly renewable and produce no harmful emissions.

Hence, the correct answer is **option 4.**

95. The last paragraph states that sugar refining plants can be set up in large cities which provide- good shipping facilities for receiving raw material and transporting the finished product and easy transport of machinery.

Hence, the correct answer is **option 4.**

96. The correct sequence of sugar preparation is explained in the last three paragraphs of the passage – Cutting → Crushing → Evaporation → Boiling → Whirling.

Hence, the correct answer is **option 1.**

97. Option 1 is mentioned in the first paragraph of the passage.

Option 2 is mentioned in "It looks like nothing so much as the soapy bluish-gray dish water that is left in the pan after the dishes have been washed".

Option 3 is stated in the penultimate paragraph of the passage which states that the process of whirling separates the dry sugar from the syrup. The syrup is later boiled into molasses. This eliminates option C.

Option 4 has no supporting data in the passage.

Hence, the correct answer is **option 4.**

98. Option 1 is incorrect because the sentence should begin with the word, "however" since a contrasting piece of information is being conveyed. Secondly, option 1 contains no punctuation necessary to make the sentence coherent.

Option 3 is incorrect because the word "monthly" comes at the end of the sentence. It should instead come before "volume data". It is a case of faulty construction and makes the sentence incoherent.

Option 4 is incorrect since the adverb, "however" should begin the sentence.

Option 4 begins with "however" and is logically coherent in all respects.

Hence, the correct answer is **option 2.**

99. Option 1 misses out on the insertion of commas after 'companies' and 'margins'. Secondly, it mentions, 'looking upon' which should ideally be 'looking at'.

Option 2 is incorrect because of the word 'look'. The entire paragraph is in simple present tense. Therefore 'look' should be replaced by 'are looking.'

Option 3 is incorrect. 'Looked at,' should be 'being looked at'. The conjunction 'being' is missing making the sentence incorrect.

Option 4 is grammatically consistent without any errors.
Hence, the correct answer is **option 4.**

100. Option 1 has a prepositional error. 'To the corporation' should be replaced by 'for the corporation'. Secondly, commas should be inserted wherever there is a change in thought.

Option 3 is incorrect. The phrase 'wherever they are' should come before 'whatever good they do'. It is a case of faulty construction.

Option 4 is also an error in faulty construction as 'wherever they are' should come before 'whatever they do' in order to make the sentence grammatically consistent.

Option 2 has the correct punctuation marks.
Hence, the correct answer is **option 2.**

101. Option 1 is incorrect. Poets do not craft symphonies, composers do.

Option 3 is incorrect. Painters do not contemplate the meaning of God, philosophers do.

Option 4 is incorrect. Composers do not write sonnets, poets do.

Option 2 has the correct combinations.
Hence, the correct answer is **option 2.**

102. Option 2 is incorrect. 'Luring of new models' is awkward usage and changes the meaning of the sentence. 'Spate' of new models gives a more coherent meaning as in 'a great number' of new models.

Option 3 is logically incorrect. 'Bringing of new models back' is a contradiction in itself. Secondly, the borrowing costs were falling not rising and thirdly, the number of new buyers was not falling, but increasing.

Option 4 is logically incorrect. 'Falling in new models and spate in new models' makes no logical sense and contradicts itself. Secondly, 'bringing back the borrowing costs' is also incorrect. It should read, 'falling borrowing costs'.

Ideas in option 1 are coherent.
Hence, the correct answer is **option 1.**

103. "Pedantic" means "characterized by a narrow concern for book learning , formal rules or minute details."
'Radical' means 1) 'of or going to the root or origin; fundamental' and 2) 'extreme, especially as regards change from accepted or traditional norms.'
'Dogmatic' means 'characterized by an authoritative, arrogant assertion of unproved or unprovable principles.'
'Esoteric' means 'understood by or meant for only the select few who have special knowledge or interest.'
'Applicative' means 'usable or capable of being used'.
From the above meanings 'Esoteric' comes closest to 'Pedantic'.
Hence, the correct answer is **option 3.**

104. "Chagrin" means "a feeling of annoyance or embarrassment caused by failure, disappointment, or a disconcerting event."
'Euphoria' means 'a feeling of great happiness or well being'.
'Placation' means 'to appease or pacify.'
'Glee' means 'great delight, joy.'
'Mortification' means 'a feeling of shame, humiliation or wounded pride'.
From the above meanings, 'mortification' is the most suitable synonym for 'chagrin'.
Hence, the correct answer is **option 4.**

105. "Genuflect" means 'to express a servile attitude'.
'Grovel' means 'to humble oneself in an abject manner, utter servility'.
'Procrastinate' means 'to delay or defer action'.
'Renounce' means 'to give up or put aside voluntarily'.
'Incriminate' means 'to accuse of a crime or other wrongful act'.
From the above meanings, 'Grovel' comes closest in meaning to 'Genuflect.'
Hence, the correct answer is **option 1.**

106. "Stentorian" means 'a very loud or powerful sound.'
'Rhythmic' means 'to be in cadence.'
'Euphonious' means 'pleasant in sound'.
'Blaring' means 'a loud, raucous noise'.
'Subdued' means 'quiet, inhibited, repressed'.
From the above meanings, 'Blaring' is the most suitable synonym for the word "Stentorian".
Hence, the correct answer is **option 3.**

107. "Bemused" means 'bewildered or confused'.
'Amused' means 'to cause mirth, laughter or the like'.
'Bewildered' means 'completely puzzled or confused, perplexed'.
'Enlightened' means 'to give spiritual or intellectual insight to'.
'Enthused' means 'to express enthusiasm'.
From the above meanings, 'Bewildered' is the most suitable synonym for "Bemused".
Hence, the correct answer is **option 2.**

108. "Specious" means 'having the ring of truth but actually fallacious'.
'Fallacious' means 'deceptive or misleading'.
'Unfeigned' means 'sincere or genuine'.
'Obscure' means 'not clear, ambiguous, vague'.
'Pernicious' means 'ruinous or injurious'.
From the above meanings, 'Unfeigned' is the most suitable antonym for the word "Specious".
Hence, the correct answer is **option 2.**

109. "Exacting" means 'rigid or severe in demands or requirements'.
'Insouciant' means 'carefree, marked by blithe unconcern'.
'Discourteous' means 'impolite, uncivil, rude'.
'Grievous' means 'causing great sorrow or great pain or suffering'.

'Fastidious' means 'to be excessively particular, critical or demanding'.
From the above meanings, 'insouciant' is the most suitable antonym for the word "exacting."
Hence, the correct answer is **option 1.**

110. "Levitating" means 'to be rising or floating in the air'.
'Gravitating' means 'to sink or fall.'
'Enchanting' means 'charming, captivating'.
'Captivating' means 'to attract or hold the attention of, as by beauty, to enchant'.
'Vacillating' means 'wavering, indecisive, oscillating, fluctuating'.
From the above meanings, 'Gravitating' is the most suitable antonym for the word "Levitating".
Hence, the correct answer is **option 1**.

111. "Ensnared" means 'to take or catch in, to capture'.
'Seized' means 'to take hold of suddenly or forcibly'.
'Enmeshed' means 'to catch as in a net, entangle'.
'Intrigued' means 'to arouse the interest or curiosity of.'
'Released' means 'to free from confinement, bondage or obligation'.
From the above meanings, 'Released' is the most suitable antonym for the word "Ensnared".
Hence, the correct answer is **option 4.**

112. "Quagmire" means 'a situation from which extrication is very difficult.'
'Predicament' means 'an unpleasantly difficult or dangerous situation'.
'Swamp' in its verb form means 'to overwhelm, especially to overwhelm with an excess of something'.
'Tranquility' means 'calmness, peacefulness, serenity.'
'Impasse' means 'a position or situation from which there is no escape'.
'Tranquility' is a suitable antonym for "Quagmire".
Hence, the correct answer is **option 3.**

113. In the first blank 'serendipity' meaning 'to be fortunate by chance' is an odd word to use. So, is 'oddity'.
'Predilection' or 'intensity' are better choices for the first blank as 'a leader's personal predilection' or 'a leader's personal intensity' makes more sense.
The second blank can only meaningfully be filled with a word like success, survival or their synonyms.
The word 'faux pas' meaning a social blunder is a meaningless word to use for this blank contextually. Therefore, we can eliminate option 1.
'Despair' is logically inconsistent for the second blank. Therefore, we can eliminate option 2.
We are left with 'success' and 'conformity'.
A leader's personal oddity determined his organisation's conformity is meaningless and the two words contradict each other. Therefore, we can eliminate option 4.
A leader's personal 'intensity' determines the organisation's 'success' is perfectly logical.
Hence, the correct answer is **option 3.**

114. In option 1 the word for the second blank would make sense only if the main statement read, "This 'not only' allowed agriculture…" Without the connecting words 'not only', the word 'dissipated' for the second blank contradicts the passage. The same rationale applies to the second blank in option 3 which is 'restricted'. This word, too will contradict the passage. Therefore, options 1 and 3 can be eliminated.
'Evicted for the second blank in option 4 makes no sense in the context of the main statement. For the word to be meaningful, the 'not only' connector must once again apply. Therefore, option 4 can be eliminated.
Both the words in option 2 fit well in the given context.
Hence, the correct answer is **option 2.**

115. For the second blank, 'alleviate', 'annihilate' as well as 'exasperate' will not fit in logically because the diversity of the global economy is being discussed. Therefore, we can eliminate options 2,3 and 4.
For the first blank the two words in the options which may be logically sound to insert are 'stupefying' and 'variegated'. 'Stupefying' means 'astounding or astonishing,' while' variegated' means 'varied or diverse' which would be a needless repetition with the word "diversity" present immediately after the blank. Secondly, the second blank for variegated is 'annihilate' which as explained above is logically unsound.
Both the words in option 1 fit in the blanks.
Hence, the correct answer is **option 1.**

116. For the second blank only 'banishing' or 'assuaging' would make logical sense.
'Exacerbating' is logically contradictory while 'infuriating' is logically and grammatically incorrect. Therefore, we can eliminate options 2 and 3.
However, for the first blank, 'acknowledged' is a much better logical fit than 'decimated' as 'Decimated' contradicts the main statement. Therefore, option 1 scores over option 4.
Hence, the correct answer is **option 1.**

117. Only statements II or III can serve as the introductory statements but since statement III is not present in any of the answer options as the introductory statement, we are compelled to choose statement II as the introductory statement. Therefore, we can eliminate options 1 and 4.
The gist of statement II is that according to the author, other companies look to the author's company "as a hunting ground for talent."
Statements I and IV will follow statement II since they describe the actions taken by the company to minimize the risk of high employee attrition. Statement I will follow II with one action the company has taken, namely "ESOPs". Statement IV, with the word, "further" will follow statement I detailing some other actions taken by the company to "mitigate the risk" - "development of leadership skills" and building "employee motivation".
Statements II, I and IV in that order constitute a coherent paragraph. Statement III with its monologue on the growth of the Indian economy leading to an increased requirement for talented managers is superfluous and

can be rendered redundant since this statement, if included, would make the paragraph somewhat disjointed. Secondly, it is a generalized statement having no bearing on the other three statements. Therefore, we can eliminate option 2.

Hence, the correct answer is **option 3**.

118. Statement III is the obvious introductory statement since it introduces the theme of the paragraph, viz. human transmission. Therefore, we can eliminate options 1, 2 and 4.

Hence, the correct answer is **option 3.**

119. Statement IV is the obvious introductory statement since it highlights the theme of the paragraph, which is how Asia is responding to the current economic crisis. Therefore, we can eliminate options 2, 3 and 4.

Statement II will follow - pointing out how the current crisis has exposed the flaws in the Asian countries' economic growth model.

Statement I details what Asia needs to do- "alternative sources of growth" to compensate for the fall in demand from the West.

Statement III puts the economic model of Asian countries in proper perspective- "the export-led model" of Asian countries must be adapted to a different global context.

Hence, the correct answer is **option 1**.

120. Statements IV and III are a pair. The "latter" in statement III refers to "social consensus" in statement IV while the "former" in III refers to "individual rights" in statement IV. Therefore, options 1, 2 and 4 are eliminated.

Statement III mentions that the judiciary is meant to secure and protect the individual rights for the individual against the *excesses* of legislative and governmental functions. Where do the excesses occur? This is answered by statement I with the phrase" irrational majoritarianism"-in other words, "irrational majoritianism" poses a threat to "enlightened consensus" and thereby to the development of democracy- as mentioned in statement I.

Statement II effectively concludes the paragraph by defining "Real democracy"- viz. mediating the popular will- not necessarily the will of the majority- with the help of institutions and laws.

Hence, the correct answer is **option 3.**

121. Statement IV introduces the theme of the paragraph, which is allopathic treatment versus Ayurveda. We can eliminate option 4.

Statements I and II are a pair. While the first, Allopathy, provides immediate relief, the second, Ayurveda, cures the problem from the root. We can eliminate options 1 and 3.

Statement III provides a very effective conclusion by highlighting the merits of synergizing these two distinct branches of medicine.

Hence, the correct answer is **option 2.**

122. Statement IV mentions the protagonist of the paragraph- Julian. Therefore it can serve as an effective introductory statement. We can eliminate options 1, 2 and 3.

Statement III will follow since it begins with the phrase, "At first" referring to a decision that Julian wanted to take while setting out to trek to Savana.

The word "instincts" in statement III logically connects it to statement II which refers to Julian placing "his trust in his intuition", or instincts.

Statement I concludes the paragraph by stating that Julian began his trek, by climbing.

Hence, the correct answer is **option 4.**