

IIFT 2018

Data Interpretation & Logical Reasoning

Instructions [1 - 4]

Based on the information given below, answer the questions which follow.

The data on select economic indicators for entire world comprising of 7 regions namely East Asia & Pacific, Europe & Central Asia, Latin America & Caribbean, Middle East & North Africa, North America, South Asia and Sub-Saharan Africa is presented in Table-1 for the year 2017. Further, Table-2 represents the economic indicators for select countries.

GNI refers to Gross National Income (USD Billions). PPP refers to Purchasing Power Parity (USD Billions). POP refers to Population (Millions) and SA refers to Surface Area (Thousands sq. km)

Table-1: Economic Indicators for Different Regions of World

Regions/Indicators	POP	SA	GNI	PPP
East Asia & Pacific	2,314	28,825	23,538	42,085
Europe & Central Asia	915.5	28,461	20,738	29,793
Latin America & Caribbean	644	20,426	5,282	9,838
Middle East & North Africa	444	11,371	3,220	8,890
North America	363	19,816	20,561	21,291
South Asia	1,788	5,135	3,118	11,693
Sub - Saharan Africa	1,061	24,291	1,543	3,908

Table-2: Economic Indicators for Select Countries

Countries/Indicators	POP	SA	GNI	PPP
India	1,339	3,287	2,430	9,449
Estonia	1.3	45	24	41
Kyrgyz Republic	6.5	200	7	22
Lao PDR	7	237	16	46
Latvia	2	65	29	53
United States	326	9,832	18,980	19,608

1. Arrange the countries in order of increasing population density (number of people per sq. kms).

- A** Estonia, Kyrgyz Republic, Lao PDR and Latvia
- B** Estonia , Latvia, Kyrgyz Republic and Lao PDR
- C** Estonia , Lao PDR, Kyrgyz Republic and Latvia
- D** Estonia , Lao PDR, Latvia and Kyrgyz Republic

Answer: D

Explanation:

	POP	SA	POP/SA
India	1339	3287	0.407362
Estonia	1.3	45	0.028889
KR	6.5	200	0.0325
Lao PDR	7	237	0.029536
Latvia	2	65	0.030769
US	326	9832	0.033157

From the above table it is clear that option D is the correct answer.

2. For which of the region, the 'GNI per capita' is closest to that of 'GNI per capita' of world?

- A** East Asia & Pacific
- B** Europe & Central Asia
- C** Latin America & Caribbean
- D** North America

Answer: A

Explanation:

	POP	PPP	PPP/POP
East Asia & Pacific	2314	23538	10.172
Europe & Central Asia	915.5	20738	22.6521
Latin America Caribbean	644	5282	8.201863
Middle East	444	3220	7.252252
North America	363	20561	56.64187
South Asia	1788	3118	1.743848
Sub Sahara	1061	1543	1.454288
	7529.5	78000	10.35925

From the table it can be seen that East Asia is closest to the GNI of the world

3. What percentage of world's GNI is represented by combined GNI of India and US?

- A** 28.98

- B** 28.42
- C** 27.45
- D** 30.19

Answer: C

Explanation:

Combined GNI of India and US is 21410.

GNI of world is 78000.

$$\text{Percentage} = (21410/78000) \times 100$$

$$= 27.45\%$$

4. Which region has third lowest difference between 'PPP per capita' and 'GNI per capita'?

- A** Latin America & Caribbean
- B** South Asia
- C** Middle East & North Africa
- D** East Asia & Pacific

Answer: B

Explanation:

Countries	POP	PPP-GNI(D)	D/POP
EA & P	2314	18547	8.015
E & CA	9155	9055	9.89
LA & C	644	4556	7.07
ME & NA	444	5670	12.77
NA	363	730	2.011
SA	1788	8575	4.79
SSA	1061	2365	2.23

South Asia has third lowest difference between PPP per capita and GNI per capita.

The answer is option B.

Instructions [5 - 8]

Based on the information given below, answer the questions which follow.

The occupancy rate of a hotel is the share of available rooms that are occupied during a given time. Figure-1 presents quarter wise average hotel occupancy in four regions (Asia-Pacific, America, Europe and Middle East & Africa) for the year 2016. Figure-2, shows the revenue of select hotel chains worldwide in 2016.

Figure-1: Region Wise Average Hotel Occupancy Rates

Occupancy rates

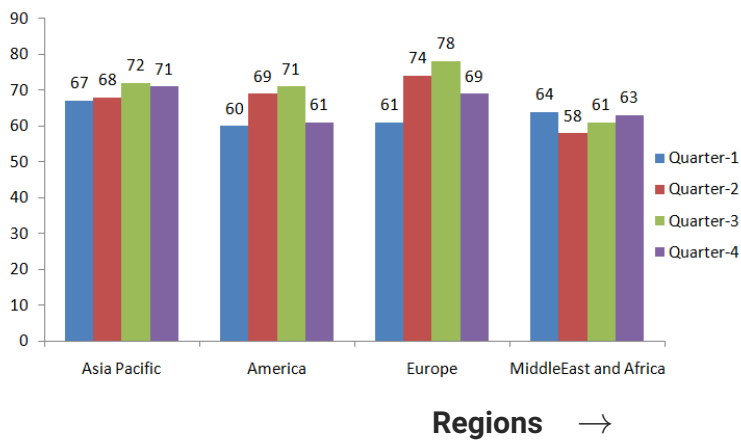
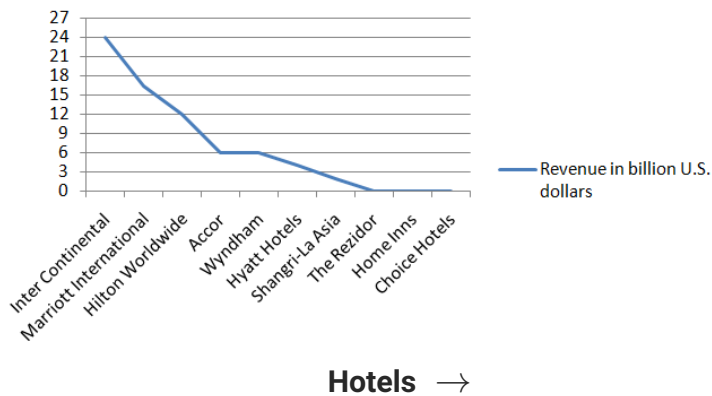


Figure-2: Revenue of Select Hotel Chains Worldwide



5. Considering the total revenue of the hotel industry in 2016 as 495.17 billion USD. what is the percentage contribution of revenue of select hotel chains to hotel industry revenue?

- A 13
- B 14
- C 15
- D 16

Answer: B

Explanation:

$$\text{Required percentage} = \frac{24+16+12+6+6+4.5+2+0+0+0}{495.17} \times 100 = \frac{70.5}{495.17} \times 100 = 14.23\%$$

The answer is option B.

6. For Hilton Worldwide, considering 70% average occupancy rate for 365 days of operations and average room rent of 350 USD per day, the total number of rooms available (in 000's) in Hilton Worldwide per day approximately are:

- A 150
- B 130
- C 160
- D 170

Answer: B

Explanation:

Let the total number of rooms available be 'T'

$$\frac{70}{100}T \times 1000 \times 365 \times 350 = 12 \times 10^9$$

Solving we get, T = 134

The answer is option B.

7. If the number of available rooms in each of the four regions (Asia-Pacific, America, Europe and Middle East & Africa) are in the ratio 1:2:5:4, the average occupancy rate for Quarter-1 are:

A 62

B 66

C 58

D 60

Answer: A

Explanation:

$$\text{Average occupancy rate} = \frac{67(x) + 60(2x) + 61(5x) + 64(4x)}{12x} = \frac{748x}{12x} = 62.3$$

The answer is option A.

8. Assuming that there is no change in the number of available rooms in a given year in all four regions, the correct arrangement in the increasing order of average annual occupancy rates is :

A Asia-Pacific, Europe, America and Middle East & Africa

B Middle East & Africa, America, Asia-Pacific and Europe

C Asia-Pacific, America, Middle East & Africa and Europe

D Middle East & Africa, America, Europe and Asia-Pacific

Answer: B

Explanation:

$$\text{Average annual occupancy rate of Asia Pacific} = \frac{67+68+72+71}{4} = \frac{278}{4} = 69.5$$

$$\text{Average annual occupancy rate of America} = \frac{60+69+61+71}{4} = \frac{261}{4} = 65.25$$

$$\text{Average annual occupancy rate of Europe} = \frac{74+69+61+78}{4} = \frac{282}{4} = 70.5$$

$$\text{Average annual occupancy rate of Middle East and Africa} = \frac{64+58+61+63}{4} = \frac{246}{4} = 61.5$$

Increasing order - Middle East and Africa, America, Asia Pacific and Europe

The answer is option B.

Instructions [9 - 12]

Based on the information answer the questions which follow.

IBM is one of the most valuable technology brand in the world. Visualizing the trends, IBM has added and dropped business segments across years. For example, "Technology Services and Cloud Platforms (TSCP)" which started in 2015 only, generated a revenue of approximately 34280 million U.S. Dollars in 2017. Table shows the Global Revenue generated by IBM in nine different segments of its business from 2010 to 2017 in millions USD.

IBM's Global Revenue from 2010 to 2017 (in millions U.S. Dollars)

Years	TSCP	CS	GBS	SYS	GF	Others	SOFT	GTS	S&T
2010			18,220		2,240	750	22,490	38,200	17,970
2011			19,280		2,100	720	24,940	40,880	18,990
2012			18,570		2,010	580	25,450	40,240	17,670
2013			18,400		2,020	490	25,930	38,550	14,370
2014			17,800		2,000	500	25,400	37,100	10,000
2015	35,140	17,840	17,160	9,550	1,840	210			
2016	35,340	18,190	16,700	7,710	1,690	290			
2017	34,280	18,450	16,350	8,190	1,700	170			

TSCP-Technology Services & Cloud Platforms. CS-Cognitive Solutions, GBS-Global Business Services, SYS-Systems, GF-Global Financing, Other. SOFT-Software. GTS-Global Technology Services and S&T-Systems and Technology

9. For the year 2017, if the revenue in different segments is represented on a pie-chart, what sector angle would be represented by 'Global Business Services (GBS)'?

- A 75 Degree
- B 85 Degree
- C 80 Degree
- D 70 Degree

Answer: A

Explanation:

Total revenue in 2017 = 34280 + 18450 + 16350 + 8190 + 1700 + 170 = 79140

Angle subtended by GBS = $\frac{16350}{79140} \times 360^\circ = 74.37 \approx 75$

The answer is option A.

10. Which segment has earned third highest cumulative revenue in the time period 2010-2017?

- A Global Business Services
- B Software
- C Global Technology Services
- D Systems and Technology

Answer: B

Explanation:

TSCP - 35140 + 35240 + 34280 = 104760

CS - 17840 + 18190 + 18450 = 54480

GBS - 18220 + 19280 + 18570 + 18400 + 17800 + 17160 + 16700 + 16350 = 142480 - 2nd

$$\text{SYS} - 9550 + 7710 + 8190 = 25450$$

$$\text{GF} - 2240 + 2100 + 2010 + 2020 + 2000 + 1840 + 1690 + 1700 = 15600$$

Others - least - 3710

$$\text{SOFT} - 22490 + 24940 + 25450 + 25930 + 25400 = 124210 - 3^{\text{rd}}$$

$$\text{GTS} - 38200 + 40880 + 40240 + 38550 + 37100 = 194970 - 1^{\text{st}}$$

$$\text{S\&T} - 17970 + 18990 + 17670 + 14370 + 10000 = 79000$$

Software has earned third highest cumulative revenue in the time period 2010-2017.

The answer is option B.

11. The profit booked by IBM in year 2012 is USD 49 billion. Considering equal percentage profit margins across all segments, then approximate profit made by 'Systems and Technology' in millions USD is

- A 8200
- B 8500
- C 8700
- D 8900

Answer: A

Explanation:

$$\text{Revenue in 2012} = 18570 + 2010 + 580 + 25450 + 40240 + 17670 = 104520 = 104.52 \text{ billion}$$

$$\text{Profit \%} = \frac{49}{104.52 - 49} \times 100 = 88.26\%$$

Let the profit made by Systems and Technology in 2012 be 'x'

$$\frac{x}{17670 - x} = \frac{49}{55.52}$$

$$x = 8283.87$$

The answer is option A.

12. By how much is ratio of percentage of 'revenue from Global Business Services' to 'Total Revenue' lower than ratio of percentage of 'revenue from Cognitive Solutions' to 'Total Revenue' for the year 2016?

- A 1
- B 2
- C 3
- D 5

Answer: B

Explanation:

$$\text{Difference} = \frac{18190 - 16700}{79920} \times 100 = 1.86\% \approx 2\%$$

The answer is option B.

Instructions [13 - 16]

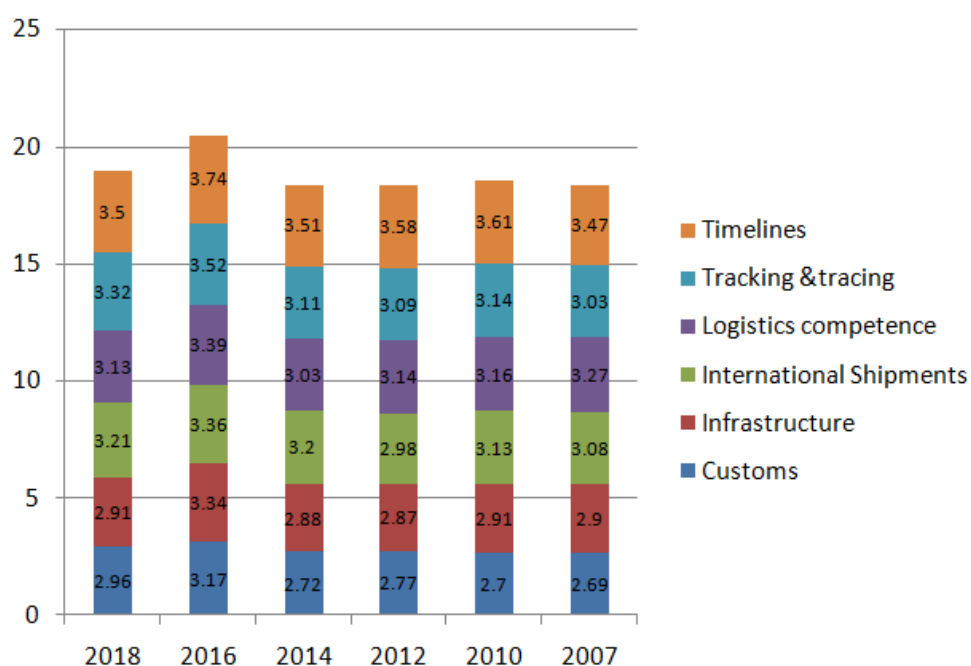
Based on the information answer the questions which follow.

The Logistics Performance Index (LPI) is an interactive benchmarking tool created by the World Bank to help countries identify the challenges and opportunities they face in their performance on trade logistics and what they can do to improve their performance. It is a measure of the country scores on six key indicators: Customs, Infrastructure, International Shipments, Logistics Competence, Tracking & Tracing and Timeliness. Table shows the LPI indicators (on the scale of 1 to 5) of select countries on these indicators. Figure below presents the perceived performance of these indicators (on the scale of 1 to 5) of India on these 6 indicators.

Table: LPI Indicators of Select Countries in 2018

Countries/ Indicators	Customs	Infrastructure	International Shipment	Logistics Competence	Tracking & Tracing	Timelines
Austria	3.71	4.18	3.88	4.08	4.09	4.25
UK	3.77	4.03	3.67	4.05	4.11	4.33
USA	3.78	4.05	3.51	3.87	4.09	4.08
Switzerland	3.63	4.02	3.51	3.97	4.1	4.24
France	3.59	4	3.55	3.84	4	4.15

Figure: LPI Indicators for India



13. Considering Logistics Performance Index as the average of the scores obtained on the six parameters, the correct sequence of the countries in increasing order of LPI in the year 2018 is

- A UK, Austria, USA, Switzerland and France
- B Austria, UK, USA, Switzerland and France
- C France, USA, Switzerland, UK and Austria
- D UK, USA, Switzerland, Austria and France

Answer: C

Explanation:

Austria - $3.71 + 4.18 + 3.88 + 4.08 + 4.09 + 4.25 = 24.19$

UK - $3.77 + 4.03 + 3.67 + 4.05 + 4.11 + 4.33 = 23.96$

USA - $3.78 + 4.05 + 3.51 + 3.87 + 4.09 + 4.08 = 23.38$

Switzerland - $3.63 + 4.02 + 3.51 + 3.97 + 4.1 + 4.24 = 23.47$

France - $3.59 + 4 + 3.55 + 3.84 + 4 + 4.15 = 23.13$

Increasing order - France, USA, Switzerland, UK, Austria

The answer is option C.

14. Arrange the countries in ascending order on the basis of score obtained on (Timeliness) - (Logistics Competence)

A Austria, USA, Switzerland, UK and France

B Austria, USA, UK, Switzerland and France

C Austria, Switzerland, USA, UK and France

D Austria, USA, UK, France and Switzerland

Answer: A

Explanation:

Austria - $4.25 - 4.08 = 0.17$

UK - $4.33 - 4.05 = 0.28$

USA - $4.08 - 3.87 = 0.21$

Switzerland - $4.24 - 3.97 = 0.27$

France - $4.15 - 3.84 = 0.31$

Ascending order - Austria, USA, Switzerland, UK and France

The answer is option A.

15. In which year the difference between the score obtained on Timeliness between Germany and India is minimum considering the score obtained on Timeliness for Germany as 4.39, 4.45, 4.36, 4.32, 4.48 and 4.33 for 2018, 2016, 2014, 2012, 2010 and 2007 respectively?

A 2016

B 2014

C 2012

D 2018

Answer: A

Explanation:

	2007	2010	2012	2014	2016	2018
Germany	4.33	4.48	4.32	4.36	4.45	4.39
India	3.47	3.61	3.58	3.51	3.74	3.50
Difference	0.86	0.87	0.74	0.85	0.71	0.89

Difference is minimum in the year 2016. The answer is option A.

16. Among the following the difference in performance of which indicator in 2018 as compared to that of 2007 is minimum for India?

- A Customs
- B International Shipments
- C Timeliness
- D Tracking & Tracing

Answer: C

Explanation:

Customs - $2.96 - 2.69 = 0.27$
 International Shipments - $3.21 - 3.08 = 0.13$
 Timeliness - $3.5 - 3.47 = 0.03$
 Tracking & Tracing - $3.32 - 3.03 = 0.29$
 The answer is option C.

Instructions [17 - 20]

Based on the information answer the questions which follow.

The data was collected for an industry in order to analyse the impact and importance of select parameters. The Figure represents performance of the industry on select parameters which are Fixed Capital, Materials, Value added and Number of Factories from the year 2008-09 to 2015-16. Total inputs - (Output – Value added). Table represents select performance indicators which are Output, Number of Workers and Emoluments from the year 2008-09 to 2015-16.

Figure: Industry Indicators from 2008-09 to 2015-16

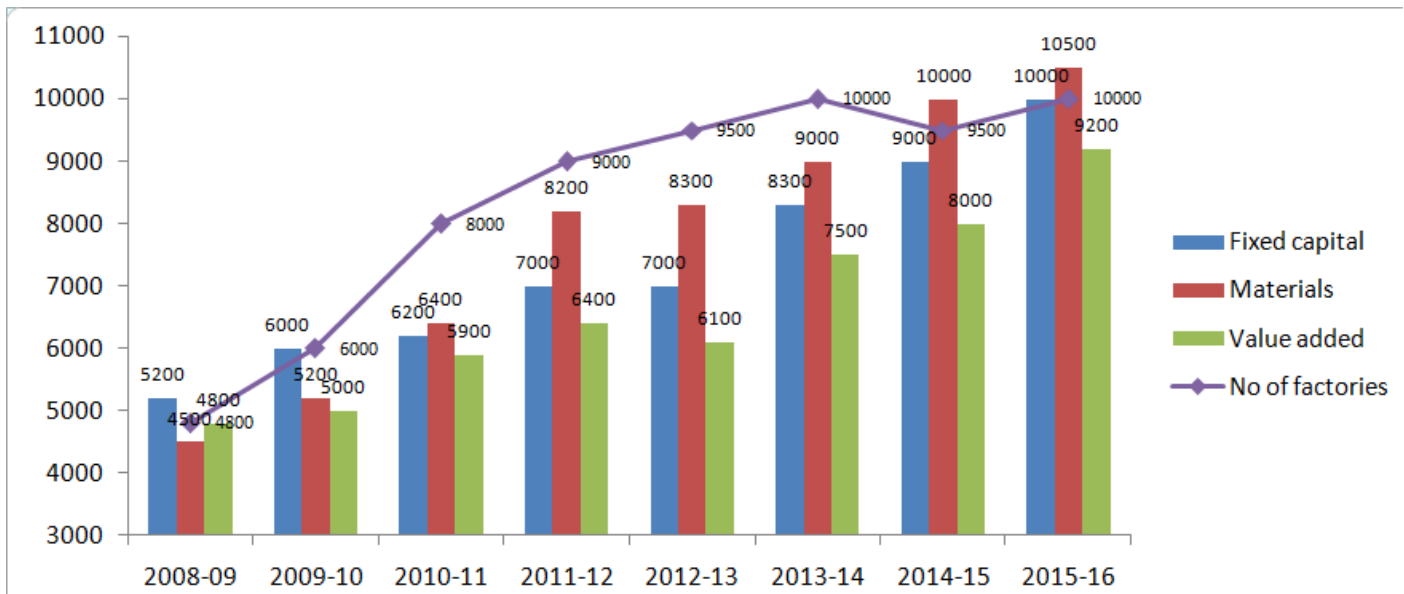


Table: Industry Indicators from 2008-09 to to 2015-16

Year	Output in Rs. Billion	No. of workers	Emoluments in Rs. Billion
2008-09	11442	2,39,966	65
2009-10	12241	2,50,009	81
2010-11	14993	2,89,965	102
2011-12	18250	3,25,000	135
2012-13	19249	3,30,000	147
2013-14	21493	3,80,000	177
2014-15	23251	3,69,996	202
2015-16	25506	3,99,988	245

17. In which of the following year annual growth rate in emoluments per worker is highest?

- A** 2009 - 10
- B** 2011 - 12
- C** 2014 - 15
- D** 2015 - 16

Answer: A

Explanation:

Year	Emoluments(E)	Workers(n)	E/n	% change
2008-09	65000	239966	0.27	
2009-10	81000	250009	0.324	20
2010-11	102000	289965	0.352	8.64
2011-12	135000	325000	0.415	17.89
2012-13	147000	330000	0.445	7.23
2013-14	177000	380000	0.466	4.72
2014-15	202000	369996	0.546	17.17
2015-16	245000	399988	0.613	12.27

Emoluments per worker is highest in the year 2009-10.

The answer is option A.

18. In which of the following year fixed capital per factory is lowest?

- A 2008 - 09
- B 2011 - 12
- C 2013 - 14
- D 2015 -16

Answer: B

Explanation:

Year	FixedCapital	Factories	Ratio
2008-09	5200	4800	1.08
2011-12	7000	9000	0.77
2013-14	8300	10000	0.83
2015-16	10000	10000	1

Fixed capital per factory is lowest in the year 2011-12.

The answer is option B.

19. In which of the following year Material as a proportion of 'Total inputs' is highest?

- A 2008 - 09
- B 2009 - 10
- C 2010 - 11
- D 2011 - 12

Answer: B

Explanation:

Year	Materials(M)	Output	Values	Inputs(I)	M/I
2008-09	4500	11442	4800	6642	0.68
2009-10	5200	12241	5000	7241	0.72
2010-11	6400	14993	5900	9093	0.7
2011-12	8200	18250	6400	11850	0.69

Material as a proportion of 'Total inputs' is highest in the year 2009-10.

The answer is option B.

20. For how many years annual percentage growth in fixed capital is greater than annual percentage growth in number of factories?

- A 3
- B 4
- C 5

D 6

Answer: B

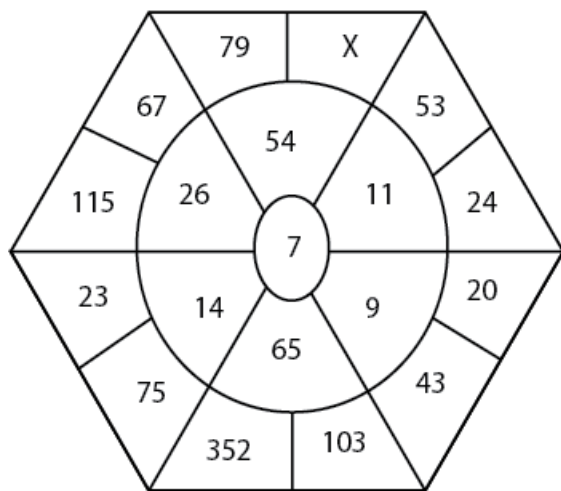
Explanation:

Year	FixedCapital	change	Factories	change
2008-09	5200		4800	
2009-10	6000	15.38%	6000	25%
2010-11	6200	3.33%	8000	33%
2011-12	7000	12.9%	9000	12.5%
2012-13	7000	0	9500	5.5%
2013-14	8300	18.5%	10000	5.26%
2014-15	9000	8.4%	9500	-
2015-16	10000	11.11%	10000	5.26%

Annual percentage growth in fixed capital is greater than annual percentage growth in number of factories for four years, i.e. 2011-12, 2013-14, 2014-15 and 2015-16.

The answer is option B.

21. Find the value of X.



A 299

B 399

C 298

D 308

Answer: A

Explanation:

$$43 + 20 = 63, 63/7 = 9$$

$$352 + 103 = 455, 455/7 = 65$$

$$75 + 23 = 98, 98/7 = 14$$

$$115 + 67 = 182, 182/7 = 26$$

$$53 + 24 = 77, 77/7 = 11$$

$$\frac{79+X}{7} = 54$$

$$X = 299$$

The answer is option A.

Instructions [22 - 25]

Based on the information below, answer the questions which follow.

Six friends Albert, Betty, Claire, Daisy, Evan and Fred who are working in different organisations, are looking for a switch in their jobs. They came across an advertisement in the newspaper regarding a job fair being organised in New Delhi. After enrolling for the fair, different days are allotted to each one of them from Monday to Saturday not necessarily in the same order, starting from Monday. They also had to arrange for their stay in different hotels to concentrate well while preparing for the upcoming interviews namely Taj, Hilton, Crowne Plaza, Radisson, Hyatt and Marriott. Additional information provided is as follows:

- i. Albert prefers to stay in Taj but not in Hilton. Albert does not work in Whirlpool and participates in the Job fair on Monday. The person who works in Whirlpool participates in the Job fair on Saturday.
- ii. Fred does not stay in Hyatt but works in Himalaya.
- iii. Betty and Daisy participate in the Job fair on consecutive days.
- iv. Claire participates in the Job fair on the day before the person staying in Crowne Plaza but on the next day of Pepsi employee.
- v. The person working with Oppo participates in the Job fair on Friday and does not stay in Hilton.
- vi. Claire who is working with Nestle participates in the Job fair at a gap of one day prior to Evan.
- vii. Daisy stays in Marriott and attends the conference on the last day of the week.
- viii. The person working with Apple stays in Radisson.

22. Which of the following friend is working with Apple?

- A** Albert
- B** Daisy
- C** Evan
- D** Fred

Answer: C

Explanation:

In statement 1, it is given that Albert participates in job fair on Monday. In statement 7, it is given that Daisy stays in Marriott and attends the conference on the last day of the week. This implies Daisy attends conference on Saturday. In statement 1, it is given that the person who works in Whirlpool participates in the Job fair on Saturday. Therefore,

Name	Day	Hotel	Company
A	Monday		
B			
C			
D	Saturday	Marriott	Whirlpool
E			
F			

In statement 3, it is given that Betty and Daisy participate in the Job fair on consecutive days. This implies Betty participate in the Job fair on Friday. In statement 5, it is given that the person working with Oppo participates in the Job fair on Friday. This implies Betty is working with Oppo. Therefore,

Name	Day	Hotel	Company
A	Monday		
B	Friday		Oppo
C			
D	Saturday	Mariott	Whirlpool
E			
F			

In statement 2, it is given that Fred does not stay in Hyatt but works in Himalaya. In statement 6, it is given that Claire who is working with Nestle participates in the Job fair at a gap of one day prior to Evan. This implies Claire attends job fair on Tuesday and Evan attends job fair on Thursday.

Name	Day	Hotel	Company
A	Monday		
B	Friday		Oppo
C	Tuesday		Nestle
D	Saturday	Mariott	Whirlpool
E	Thursday		
F	Wednesday		Himalaya

In statement 8, it is given that the person working with Apple stays in Radisson. In statement 4, it is given that Claire participates in the Job fair on the day before the person staying in Crowne Plaza but on the next day of Pepsi employee. This implies the person staying in Crowne Plaza attends job fair on Wednesday and Pepsi employee attend job fair on Monday.

Final arrangement:

Name	Day	Hotel	Company
A	Monday	Taj	Pepsi
B	Friday	Hyatt	Oppo
C	Tuesday	Hilton	Nestle
D	Saturday	Mariott	Whirlpool
E	Thursday	Radisson	Apple
F	Wednesday	C.Plaza	Himalaya

Evan is working with Apple. The answer is option C.

23. Who participated in the job fair on Wednesday.?

- A Claire
- B Daisy
- C Fred
- D Albert

Answer: C

Explanation:

In statement 1, it is given that Albert participates in job fair on Monday. In statement 7, it is given that Daisy stays in Marriott and attends the conference on the last day of the week. This implies Daisy attends conference on Saturday. In statement 1, it is given that the person who works in Whirlpool participates in the Job fair on Saturday. Therefore,

Name	Day	Hotel	Company
A	Monday		
B			
C			
D	Saturday	Mariott	Whirlpool
E			
F			

In statement 3, it is given that Betty and Daisy participate in the Job fair on consecutive days. This implies Betty participate in the Job fair on Friday. In statement 5, it is given that the person working with Oppo participates in the Job fair on Friday. This implies Betty is working with Oppo. Therefore,

Name	Day	Hotel	Company
A	Monday		
B	Friday		Oppo
C			
D	Saturday	Mariott	Whirlpool
E			
F			

In statement 2, it is given that Fred does not stay in Hyatt but works in Himalaya. In statement 6, it is given that Claire who is working with Nestle participates in the Job fair at a gap of one day prior to Evan. This implies Claire attends job fair on Tuesday and Evan attends job fair on Thursday.

Name	Day	Hotel	Company
A	Monday		
B	Friday		Oppo
C	Tuesday		Nestle
D	Saturday	Mariott	Whirlpool
E	Thursday		
F	Wednesday		Himalaya

In statement 8, it is given that the person working with Apple stays in Radisson. In statement 4, it is given that Claire participates in the Job fair on the day before the person staying in Crowne Plaza but on the next day of Pepsi employee. This implies the person staying in Crowne Plaza attends job fair on Wednesday and Pepsi employee attend job fair on Monday.

Final arrangement:

Name	Day	Hotel	Company
A	Monday	Taj	Pepsi
B	Friday	Hyatt	Oppo
C	Tuesday	Hilton	Nestle
D	Saturday	Mariott	Whirlpool
E	Thursday	Radisson	Apple
F	Wednesday	C.Plaza	Himalaya

Fred participated in the job fair on Wednesday. The answer is option C.

24. If the current salary packages of the friends working in Whirlpool, Nestle, Himalaya, Pepsi, Oppo and Apple are 20, 30. 40; 50, 60 and 70 lakhs per annum in the same order, then at the time of participating in job fair find the average annual package of Albert, Betty and Fred?

- A 30 lakhs per annum
- B 90 lakhs per annum
- C 20 lakhs per annum
- D 50 lakhs per annum

Answer: D

Explanation:

In statement 1, it is given that Albert participates in job fair on Monday. In statement 7, it is given that Daisy stays in Marriott and attends the conference on the last day of the week. This implies Daisy attends conference on Saturday. In statement 1, it is given that the person who works in Whirlpool participates in the Job fair on Saturday. Therefore,

Name	Day	Hotel	Company
A	Monday		
B			
C			
D	Saturday	Mariott	Whirlpool
E			
F			

In statement 3, it is given that Betty and Daisy participate in the Job fair on consecutive days. This implies Betty participate in the Job fair on Friday. In statement 5, it is given that the person working with Oppo participates in the Job fair on Friday. This implies Betty is working with Oppo. Therefore,

Name	Day	Hotel	Company
A	Monday		
B	Friday		Oppo
C			
D	Saturday	Mariott	Whirlpool
E			
F			

In statement 2, it is given that Fred does not stay in Hyatt but works in Himalaya. In statement 6, it is given that Claire who is working with Nestle participates in the Job fair at a gap of one day prior to Evan. This implies Claire attends job fair on Tuesday and Evan attends job fair on Thursday.

Name	Day	Hotel	Company
A	Monday		
B	Friday		Oppo
C	Tuesday		Nestle
D	Saturday	Mariott	Whirlpool
E	Thursday		
F	Wednesday		Himalaya

In statement 8, it is given that the person working with Apple stays in Radisson. In statement 4, it is given that Claire participates in the Job fair on the day before the person staying in Crowne Plaza but on the next day of Pepsi employee. This implies the person staying in Crowne Plaza attends job fair on Wednesday and Pepsi employee attend job fair on Monday.

Final arrangement:

Name	Day	Hotel	Company
A	Monday	Taj	Pepsi
B	Friday	Hyatt	Oppo
C	Tuesday	Hilton	Nestle
D	Saturday	Mariott	Whirlpool
E	Thursday	Radisson	Apple
F	Wednesday	C.Plaza	Himalaya

Average annual package of Albert, Betty and Fred = $\frac{40+50+60}{3} = 50$ lakhs
The answer is option D.

25. Which of the following friend is staying in Hilton:

- A** Daisy
- B** Claire
- C** Albert
- D** Betty

Answer: B

Explanation:

In statement 1, it is given that Albert participates in job fair on Monday. In statement 7, it is given that Daisy stays in Marriott and attends the conference on the last day of the week. This implies Daisy attends conference on Saturday. In statement 1, it is given that the person who works in Whirlpool participates in the Job fair on Saturday. Therefore,

Name	Day	Hotel	Company
A	Monday		
B			
C			
D	Saturday	Mariott	Whirlpool
E			
F			

In statement 3, it is given that Betty and Daisy participate in the Job fair on consecutive days. This implies Betty participate in the Job fair on Friday. In statement 5, it is given that the person working with Oppo participates in the Job fair on Friday. This implies Betty is working with Oppo. Therefore,

Name	Day	Hotel	Company
A	Monday		
B	Friday		Oppo
C			
D	Saturday	Mariott	Whirlpool
E			
F			

In statement 2, it is given that Fred does not stay in Hyatt but works in Himalaya. In statement 6, it is given that Claire who is working with Nestle participates in the Job fair at a gap of one day prior to Evan. This implies Claire attends job fair on Tuesday and Evan attends job fair on Thursday.

Name	Day	Hotel	Company
A	Monday		
B	Friday		Oppo
C	Tuesday		Nestle
D	Saturday	Mariott	Whirlpool
E	Thursday		
F	Wednesday		Himalaya

In statement 8, it is given that the person working with Apple stays in Radisson. In statement 4, it is given that Claire participates in the Job fair on the day before the person staying in Crowne Plaza but on the next day of Pepsi employee. This implies the person staying in Crowne Plaza attends job fair on Wednesday and Pepsi employee attend job fair on Monday.

Final arrangement:

Name	Day	Hotel	Company
A	Monday	Taj	Pepsi
B	Friday	Hyatt	Oppo
C	Tuesday	Hilton	Nestle
D	Saturday	Mariott	Whirlpool
E	Thursday	Radisson	Apple
F	Wednesday	C.Plaza	Himalaya

Claire is staying in Hilton. The answer is option B.

Instructions [26 - 28]

Based on the information below, answer the questions which follow.

Richie invites three of his friends Sunny, Pinky and Nancy for his birthday party organised at his home. As the party goes on till late in the night, Sunny, Pinky and Nancy choose to stay at Richie's house. Being good friends they usually stay back at each other's house. Each one of them including Richie stay either in the room painted blue or in the room painted purple. They have adequate number of rooms of both colours. The preferences which need to be fulfilled are:

- i. If Sunny stays in the room painted purple, then Pinky and Richie stay in the same room as Nancy.
- ii. If Pinky stays in the room painted purple, then Sunny stays in the room in which Nancy and Richie don't stay.
- iii. if Nancy stays in the room painted blue, then Sunny and Richie stay in the room which Pinky has chosen.
- iv. If Richie stays in the room painted Blue then Sunny and Pinky do not stay in the same room as Nancy.

26. **Under all possible combinations which of the two friends will always have their room colours unchanged.**

- A** Richie & Sunny
- B** Pinky & Richie
- C** Nancy & Sunny
- D** Nancy & Pinky

Answer: C

Explanation:

- (i) S -> Purple
P,R,N -> Purple (or) P,R,N -> Blue
- (ii) P -> Purple
S -> Blue N,R -> Purple (or) S -> Purple N,R -> Blue
- (iii) N -> Blue
P,R,S -> Purple (or) P,R,S -> Blue
- (iv) R -> Blue
S,P -> Blue N -> Purple (or) S,P -> Purple N -> Blue

Let us consider N is in blue, then P, R, and S should be either in blue or purple.
If N is in blue and (P,R,S) is in blue, then this doesn't satisfy the condition in statement 4. If N is in blue and (P,R,S) is in purple, then this violates statement 2. Therefore, N cannot be in blue and stays in Purple room.

Let us consider S is in purple, then P, R, and N should in purple as N cannot be in blue.

If S is in purple and (P,R,N) is in purple, then this violates statement 2. Therefore, S cannot be in purple and stays in Blue room.

Possible arrangements are:

1. P - purple, S - blue, (N,R) - purple

2. R - blue, (S,P) - blue, N - purple

Rooms of N and S are unchanged in all the cases.

The answer is option C.

27. If Richie chose to stay in the room painted blue, then in which room does Pinky stay?

A Purple

B Blue

C Data Inadequate

D None of the above

Answer: B

Explanation:

(i) S -> Purple

P,R,N -> Purple (or) P,R,N -> Blue

(ii) P -> Purple

S -> Blue N,R -> Purple (or) S -> Purple N,R -> Blue

(iii) N -> Blue

P,R,S -> Purple (or) P,R,S -> Blue

(iv) R -> Blue

S,P -> Blue N -> Purple (or) S,P -> Purple N -> Blue

Let us consider N is in blue, then P, R, and S should be either in blue or purple.

If N is in blue and (P,R,S) is in blue, then this doesn't satisfy the condition in statement 4. If N is in blue and (P,R,S) is in purple, then this violates statement 2. Therefore, N cannot be in blue and stays in Purple room.

Let us consider S is in purple, then P, R, and N should in purple as N cannot be in blue.

If S is in purple and (P,R,N) is in purple, then this violates statement 2. Therefore, S cannot be in purple and stays in Blue room.

Possible arrangements are:

1. P - purple, S - blue, (N,R) - purple

2. R - blue, (S,P) - blue, N - purple

If Richie chose to stay in the room painted blue, then Pinky stays in blue painted room.

The answer is option B.

28. If Pinky does not like to stay in the blue painted room, then where will Sunny stay?

A Blue

B Purple

C Data Inadequate

D None of the above

Answer: A

Explanation:

(i) S → Purple

P,R,N → Purple (or) P,R,N → Blue

(ii) P → Purple

S → Blue N,R → Purple (or) S → Purple N,R → Blue

(iii) N → Blue

P,R,S → Purple (or) P,R,S → Blue

(iv) R → Blue

S,P → Blue N → Purple (or) S,P → Purple N → Blue

Let us consider N is in blue, then P, R, and S should be either in blue or purple.

If N is in blue and (P,R,S) is in blue, then this doesn't satisfy the condition in statement 4. If N is in blue and (P,R,S) is in purple, then this violates statement 2. Therefore, N cannot be in blue and stays in Purple room.

Let us consider S is in purple, then P, R, and N should be in purple as N cannot be in blue.

If S is in purple and (P,R,N) is in purple, then this violates statement 2. Therefore, S cannot be in purple and stays in Blue room.

Possible arrangements are:

1. P - purple, S - blue, (N,R) - purple

2. R - blue, (S,P) - blue, N - purple

If Pinky does not like to stay in the blue painted room, then Sunny will stay in blue painted room.

The answer is option A.

Instructions [29 - 32]

Based on the information answer the questions which follow.

An agent has to send a secret message to CBI office in Delhi. He needs to compile his message using following 12 code words- Scare, Logical, Mouse, Beauty, Helping, Roses, Cats, Doctor, Arguments, Crude, Ferry and Mineral. The agent compiles the coded message and delivers it to CBI office in form of a 4×3 matrix. Each coded word has been allocated a position in the matrix (1×2 position represents row 1 and column 2). The clues to compile the secret message are:

- i. The words in 2×1 and 3×1 have the same number of letters.
- ii. Roses is to the immediate left of Beauty and Mineral is immediately above Roses.
- iii. The word in 4×3 is shorter than the word in 1×2 .
- iv. Ferry is separated from Helping horizontally by only one word Logical.
- v. Arguments is at position 2×3 in the matrix and the word immediately below it has odd number of letters.
- vi. Crude and Doctor are in the same horizontal row and Crude is to the right of Doctor.
- vii. Cats is not in the same row or column as Mouse.

29. The product of the position of a coded word is 8. Identify the word.

A Crude

B Helping

C Beauty

D Scare

Answer: A

Explanation:

In statement 2 it is given that Roses is to the immediate left of Beauty and Mineral is immediately above Roses.

mineral	
roses	beauty

In statement 4 it is given that Ferry is separated from Helping horizontally by only one word Logical.

Ferry/Helping	Logical	Helping/Ferry
---------------	---------	---------------

In statement 6 it is given that Crude and Doctor are in the same horizontal row and Crude is to the right of Doctor. They can be arranged in three ways in a horizontal row.

Doctor	Crude	
Doctor		Crude
	Doctor	Crude

It is given that Arguments is at 2×3 position.

a		
b	c	Arguments
d	p	
e	f	r

There are three cases possible. Mineral, roses and beauty placed at positions (a,b,c), (d,e,f) and (p,f,r).

Case 1: Mineral, roses and beauty at (d,e,f)

Ferry/helpful	logical	helpful/ferry
		Arguments
Mineral		
Roses	Beauty	

In statement 1 it is mentioned that the words in 2×1 and 3×1 have the same number of letters. Mineral has 7 letters. There are no remaining words with 7 letters. Therefore, this case is not possible.

Case 2: Mineral, roses and beauty at (p,f,r)

ferry/helping	logical	helping/ferry
		Arguments
	Mineral	
	Roses	Beauty

Doctor must be placed at either 2×1 or 3×1 . Doctor is a 6 letter word and there is no word with 6 letters to be placed at the alternate position. Therefore, this case is not possible.

Case 3: Mineral, roses and beauty at (a,b,c)

Placing ferry, helping and logical in fourth row will not give valid arrangement. Therefore,

mineral		
roses	beauty	Arguments
ferry	logical	helpful

Remaining words are cats, doctor, crude, mouse and scare.

The number of letters in 4×3 should be less than 1×2 . Doctor cannot be placed in row 1. Therefore, a

five letter word is placed at 1×2 and four letter word placed at 4×3 .

Final arrangement:

mineral	mouse	scare
roses	beauty	Arguments
ferry	logical	helpful
doctor	crude	cats

The only possible position whose product is 8 is 4×2 . The word at 4×2 is crude.

The answer is option A.

30. The sum of letters of which row is 19?

A 1

B 2

C 3

D 4

Answer: C

Explanation:

In statement 2 it is given that Roses is to the immediate left of Beauty and Mineral is immediately above Roses.

mineral	
roses	beauty

In statement 4 it is given that Ferry is separated from Helping horizontally by only one word Logical.

Ferry/Helping	Logical	Helping/Ferry
---------------	---------	---------------

In statement 6 it is given that Crude and Doctor are in the same horizontal row and Crude is to the right of Doctor. They can be arranged in three ways in a horizontal row.

Doctor	Crude	
Doctor		Crude
	Doctor	Crude

It is given that Arguments is at 2×3 position.

a		
b	c	Arguments
d	p	
e	f	r

There are three cases possible. Mineral, roses and beauty placed at positions (a,b,c), (d,e,f) and (p,f,r).

Case 1: Mineral, roses and beauty at (d,e,f)

Ferry/helpful	logical	helpful/ferry
		Arguments
Mineral		
Roses	Beauty	

In statement 1 it is mentioned that the words in 2×1 and 3×1 have the same number of letters. Mineral has 7 letters. There are no remaining words with 7 letters. Therefore, this case is not possible.

Case 2: Mineral, roses and beauty at (p,f,r)

ferry/helping	logical	helping/ferry
		Arguments
	Mineral	
	Roses	Beauty

Doctor must be placed at either 2×1 or 3×1 . Doctor is a 6 letter word and there is no word with 6 letters to be placed at the alternate position. Therefore, this case is not possible.

Case 3: Mineral, roses and beauty at (a,b,c)

Placing ferry, helping and logical in fourth row will not give valid arrangement. Therefore,

mineral		
roses	beauty	Arguments
ferry	logical	helpful

Remaining words are cats, doctor, crude, mouse and scare.

The number of letters in 4×3 should be less than 1×2 . Doctor cannot be placed in row 1. Therefore, a five letter word is placed at 1×2 and four letter word placed at 4×3 .

Final arrangement:

mineral	mouse	scare
roses	beauty	Arguments
ferry	logical	helpful
doctor	crude	cats

Row 1 - $7 + 5 + 5 = 17$

Row 2 - $5 + 6 + 9 = 20$

Row 3 - $5 + 7 + 7 = 19$

Row 4 - $6 + 5 + 4 = 15$

The answer is option C.

31. Which word is represented in 4×3 ?

- A** Scare
- B** Crude
- C** Cats
- D** Data Inadequate

Answer: C

Explanation:

In statement 2 it is given that Roses is to the immediate left of Beauty and Mineral is immediately above Roses.

mineral	
roses	beauty

In statement 4 it is given that Ferry is separated from Helping horizontally by only one word Logical.

Ferry/Helping	Logical	Helping/Ferry
---------------	---------	---------------

In statement 6 it is given that Crude and Doctor are in the same horizontal row and Crude is to the right of Doctor. They can be arranged in three ways in a horizontal row.

Doctor	Crude	
Doctor		Crude
	Doctor	Crude

It is given that Arguments is at 2 × 3 position.

a		
b	c	Arguments
d	p	
e	f	r

There are three cases possible. Mineral, roses and beauty placed at positions (a,b,c), (d,e,f) and (p,f,r).

Case 1: Mineral, roses and beauty at (d,e,f)

Ferry/helpful	logical	helpful/ferry
		Arguments
Mineral		
Roses	Beauty	

In statement 1 it is mentioned that the words in 2 × 1 and 3 × 1 have the same number of letters. Mineral has 7 letters. There are no remaining words with 7 letters. Therefore, this case is not possible.

Case 2: Mineral, roses and beauty at (p,f,r)

ferry/helping	logical	helping/ferry
		Arguments
	Mineral	
	Roses	Beauty

Doctor must be placed at either 2 × 1 or 3 × 1. Doctor is a 6 letter word and there is no word with 6 letters to be placed at the alternate position. Therefore, this case is not possible.

Case 3: Mineral, roses and beauty at (a,b,c)

Placing ferry, helping and logical in fourth row will not give valid arrangement. Therefore,

mineral		
roses	beauty	Arguments
ferry	logical	helpful

Remaining words are cats, doctor, crude, mouse and scare.

The number of letters in 4 × 3 should be less than 1 × 2. Doctor cannot be placed in row 1. Therefore, a five letter word is placed at 1 × 2 and four letter word placed at 4 × 3.

Final arrangement:

mineral	mouse	scare
roses	beauty	Arguments
ferry	logical	helpful
doctor	crude	cats

The word represented in 4 × 3 is cats.

The answer is option C.

32. Which of the following are placed diagonally in-the matrix?

A Ferry-Mineral

B Mineral-Mouse

C Beauty-Scare

D Arguments-Roses

Answer: C

Explanation:

In statement 2 it is given that Roses is to the immediate left of Beauty and Mineral is immediately above Roses.

mineral	
roses	beauty

In statement 4 it is given that Ferry is separated from Helping horizontally by only one word Logical.

Ferry/Helping	Logical	Helping/Ferry
---------------	---------	---------------

In statement 6 it is given that Crude and Doctor are in the same horizontal row and Crude is to the right of Doctor. They can be arranged in three ways in a horizontal row.

Doctor	Crude	
Doctor		Crude
	Doctor	Crude

It is given that Arguments is at 2×3 position.

a		
b	c	Arguments
d	p	
e	f	r

There are three cases possible. Mineral, roses and beauty placed at positions (a,b,c), (d,e,f) and (p,f,r).

Case 1: Mineral, roses and beauty at (d,e,f)

Ferry/helpful	logical	helpful/ferry
		Arguments
Mineral		
Roses	Beauty	

In statement 1 it is mentioned that the words in 2×1 and 3×1 have the same number of letters. Mineral has 7 letters. There are no remaining words with 7 letters. Therefore, this case is not possible.

Case 2: Mineral, roses and beauty at (p,f,r)

ferry/helping	logical	helping/ferry
		Arguments
	Mineral	
	Roses	Beauty

Doctor must be placed at either 2×1 or 3×1 . Doctor is a 6 letter word and there is no word with 6 letters to be placed at the alternate position. Therefore, this case is not possible.

Case 3: Mineral, roses and beauty at (a,b,c)

Placing ferry, helping and logical in fourth row will not give valid arrangement. Therefore,

mineral		
roses	beauty	Arguments
ferry	logical	helpful

Remaining words are cats, doctor, crude, mouse and scare.

The number of letters in 4×3 should be less than 1×2 . Doctor cannot be placed in row 1. Therefore, a five letter word is placed at 1×2 and four letter word placed at 4×3 .

Final arrangement:

mineral	mouse	scare
roses	beauty	Arguments
ferry	logical	helpful
doctor	crude	cats

Beauty and scare are placed diagonally in-the matrix. The answer is option C.

Instructions [33 - 36]

Based on the information answer the questions which follow.

Eight officers of Indian Trade Service meet for a cup of coffee at Coffee Point. The officers P, Q, R, S, T, U, V and W are seated in a circle and discuss issues related to Trade in Services, Trade in Intellectual Property Rights, Investments, Tariffs, Remedies, Standards, Trade Facilitation and Subsidies not necessarily in the same order. An MBA student sitting on the next table overhears the discussion and ranks the issues as per their importance from 1 to 8. No two issues can have the same rank and no two officers can have the same position. Additional information available is:

- i. P is sitting to the immediate left of S and the officer opposite to S discusses issues pertaining to Remedies.
- ii. U's issue is ranked 7th and there is one officer between U and the officer whose issue is ranked 2nd.
- iii. The officer whose issue is ranked 1 is not opposite to the officer whose issue is ranked 8 who represents issues related to Investments.
- iv. The ranks of the issues raised by the officers sitting opposite to each other cannot be both even or both odd.
- v. The officer discussing issues related to Trade in Services is sitting opposite to T. T is sitting at a gap of one place from P.
- vi. R is sitting opposite to Q and represent issues related to Standards and Trade in Intellectual Property Rights not necessarily in the same order.
- vii. P's issue was ranked 4th and he was discussing issues related to Tariffs and sits opposite to the officer ranked 5th who represents issues related to Subsidies.
- viii. The officers representing issues related to Trade in Services and Trade facilitation are sitting adjacent to each other.

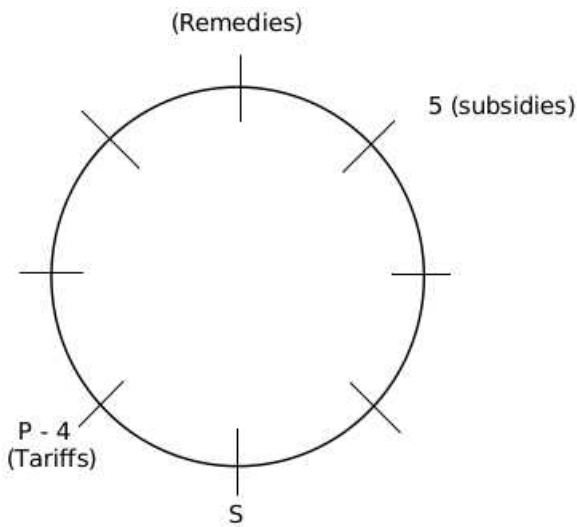
33. Which officer discusses Remedies and what is its rank?

- A** P-4
- B** S-1
- C** U-7
- D** V-5

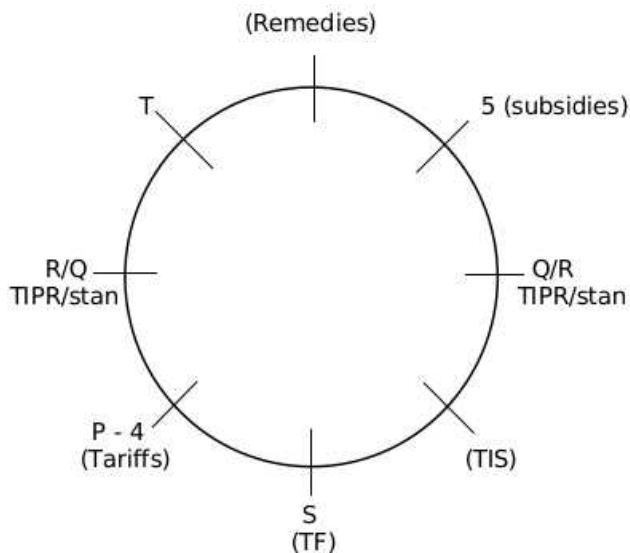
Answer: C

Explanation:

In statement (1) it is given that P is sitting to the immediate left of S and the officer opposite to S discusses issues pertaining to Remedies and in statement (7) it is given that P's issue was ranked 4th and he was discussing issues related to Tariffs and sits opposite to the officer ranked 5th who represents issues related to Subsidies. Therefore,

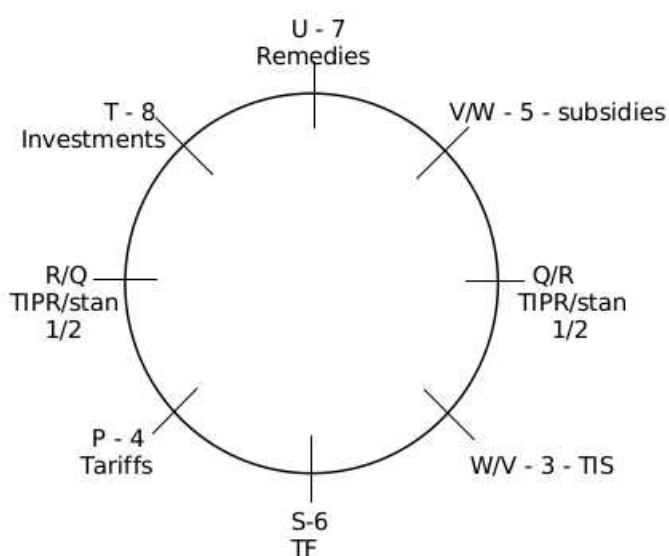


In statement 5 it is given that the officer discussing issues related to Trade in Services is sitting opposite to T. T is sitting at a gap of one place from P and in statement 8 it is given that the officers representing issues related to Trade in Services and Trade facilitation are sitting adjacent to each other. The only possible arrangement considering statement 6 as well is as shown below.



In statement 2 it is given that U's issue is ranked 7th and there is one officer between U and the officer whose issue is ranked 2nd, and in statement 3 it is given that the officer whose issue is ranked 1 is not opposite to the officer whose issue is ranked 8 who represents issues related to Investments.

Final arrangement:



U discusses Remedies and the rank is 7.

The answer is option C.

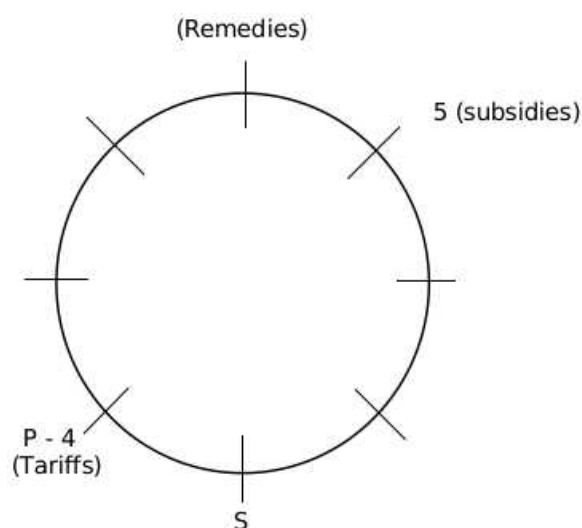
34. If the officer V is to the immediate right of the officer representing Trade Facilitation, then the officer 4th to the right of V discusses which issue?

- A Tariffs
- B Remedies
- C Subsidies
- D Investments

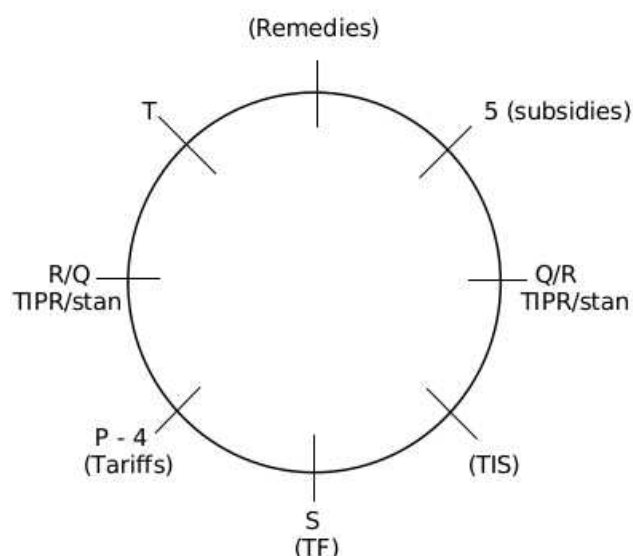
Answer: D

Explanation:

In statement (1) it is given that P is sitting to the immediate left of S and the officer opposite to S discusses issues pertaining to Remedies and in statement (7) it is given that P's issue was ranked 4th and he was discussing issues related to Tariffs and sits opposite to the officer ranked 5th who represents issues related to Subsidies. Therefore,

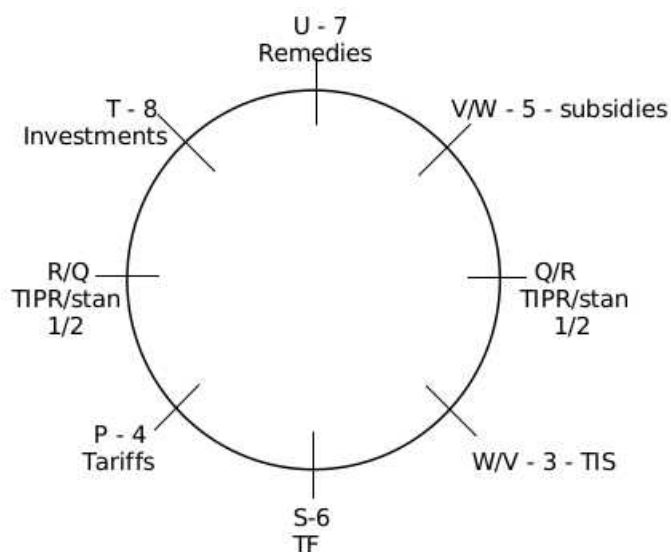


In statement 5 it is given that the officer discussing issues related to Trade in Services is sitting opposite to T. T is sitting at a gap of one place from P and in statement 8 it is given that the officers representing issues related to Trade in Services and Trade facilitation are sitting adjacent to each other. The only possible arrangement considering statement 6 as well is as shown below.



In statement 2 it is given that U's issue is ranked 7th and there is one officer between U and the officer whose issue is ranked 2nd, and in statement 3 it is given that the officer whose issue is ranked 1 is not opposite to the officer whose issue is ranked 8 who represents issues related to Investments.

Final arrangement:



If the officer V is to the immediate right of the officer representing Trade Facilitation, then the officer 4th to the right of V discusses investments.

The answer is option D.

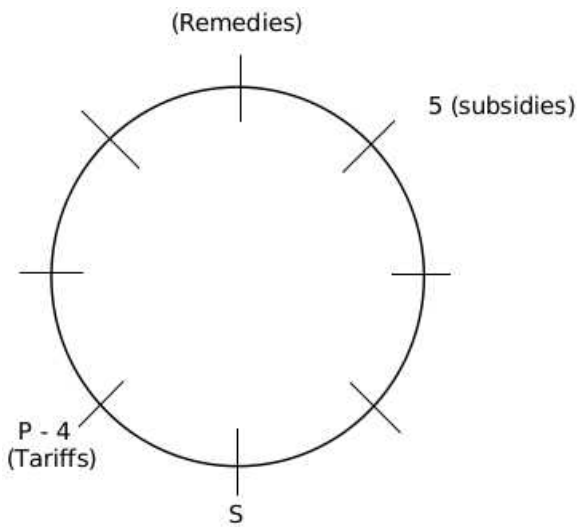
35. Which possible issues can be represented by W?

- A Standards-Trade in Intellectual Property Rights
- B Subsidies-Standards
- C Trade in Services-Subsidies
- D Trade in Services- Trade in Intellectual Property Rights-Subsidies

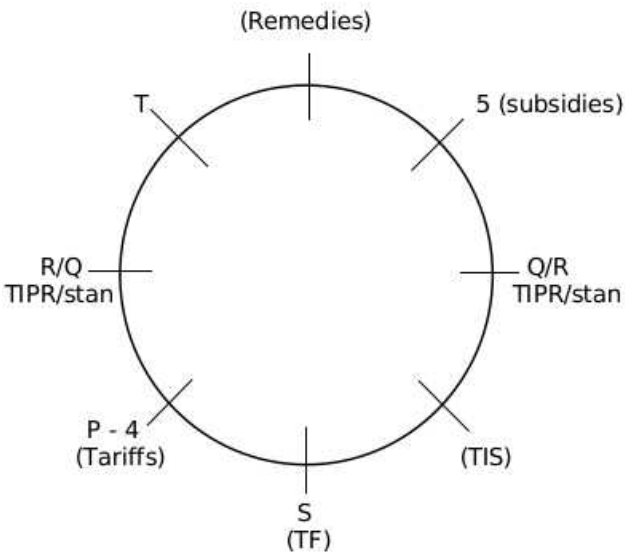
Answer: C

Explanation:

In statement (1) it is given that P is sitting to the immediate left of S and the officer opposite to S discusses issues pertaining to Remedies and in statement (7) it is given that P's issue was ranked 4th and he was discussing issues related to Tariffs and sits opposite to the officer ranked 5th who represents issues related to Subsidies. Therefore,

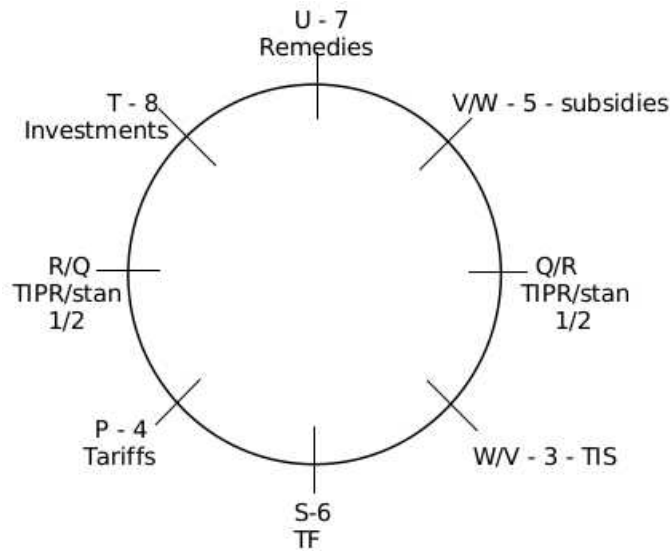


In statement 5 it is given that the officer discussing issues related to Trade in Services is sitting opposite to T. T is sitting at a gap of one place from P and in statement 8 it is given that the officers representing issues related to Trade in Services and Trade facilitation are sitting adjacent to each other. The only possible arrangement considering statement 6 as well is as shown below.



In statement 2 it is given that U's issue is ranked 7th and there is one officer between U and the officer whose issue is ranked 2nd, and in statement 3 it is given that the officer whose issue is ranked 1 is not opposite to the officer whose issue is ranked 8 who represents issues related to Investments.

Final arrangement:



Issues that can be represented by W is Trade in Services or Subsidies.

The answer is option C.

36. The officer to the 4th right to the officer discussing the issues related to Remedies, is discussing which issue?

A Trade in Intellectual Property Rights

B Trade Facilitation

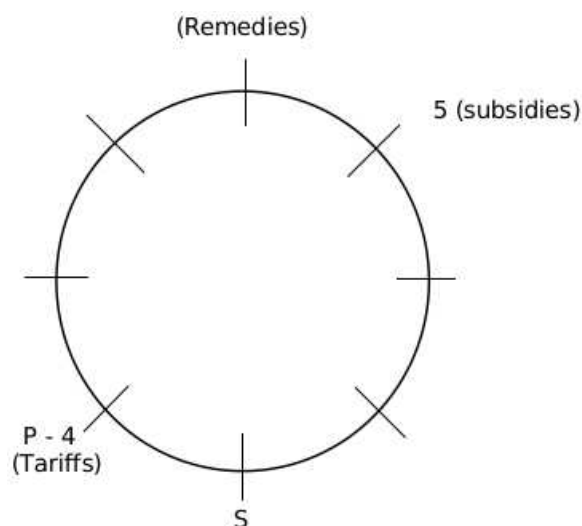
C Investments

D Subsidies

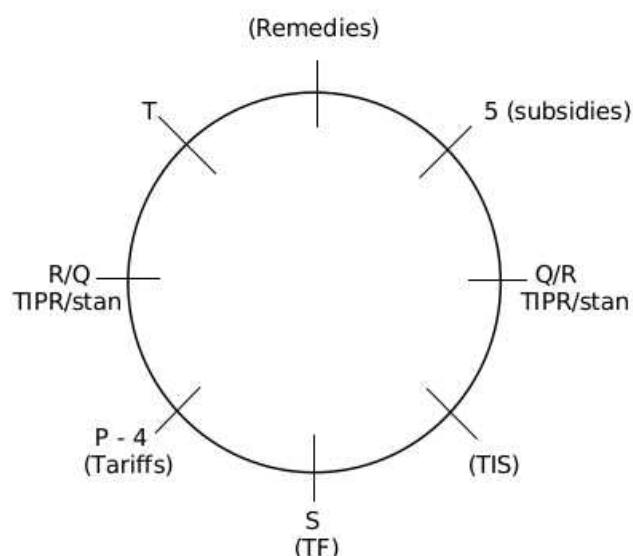
Answer: B

Explanation:

In statement (1) it is given that P is sitting to the immediate left of S and the officer opposite to S discusses issues pertaining to Remedies and in statement (7) it is given that P's issue was ranked 4th and he was discussing issues related to Tariffs and sits opposite to the officer ranked 5th who represents issues related to Subsidies. Therefore,

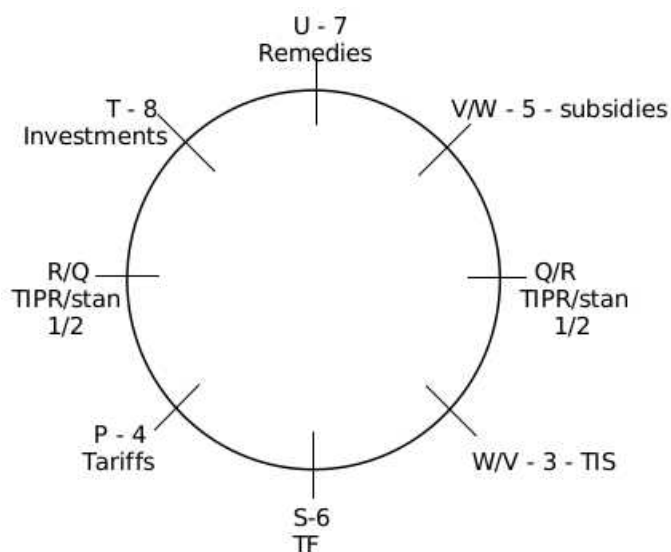


In statement 5 it is given that the officer discussing issues related to Trade in Services is sitting opposite to T. T is sitting at a gap of one place from P and in statement 8 it is given that the officers representing issues related to Trade in Services and Trade facilitation are sitting adjacent to each other. The only possible arrangement considering statement 6 as well is as shown below.



In statement 2 it is given that U's issue is ranked 7th and there is one officer between U and the officer whose issue is ranked 2nd, and in statement 3 it is given that the officer whose issue is ranked 1 is not opposite to the officer whose issue is ranked 8 who represents issues related to Investments.

Final arrangement:



The officer to the 4th right to the officer discussing the issues related to Remedies, is discussing Trade Facilitation.

The answer is option B.

Instructions [37 - 38]

Based on the information answer the questions which follow.

A consultant to Department of Commerce. Government of Bianca has suggested 30 products which have high export potential. Dora an entrepreneur and prospective exporter notices that these products can be grouped in three ways- Machine made goods, Handmade goods and Intermediate goods. Among these 30 products some products are both machine made and intermediate goods but not handmade goods. Few products have a combination of handmade and machine made goods but not intermediate goods. Some products are handmade and intermediate goods but not machine made goods. Further it is seen that handmade-machine made goods are 1 less than machine made-intermediate goods. Similarly the total number of handmade-intermediate goods is 1 less than machine made-intermediate goods. There are just 4 products common across all product groups i.e. machine made-handmade- intermediate goods. Apart from this the number of only handmade goods is same as only machine made goods but less than only intermediate goods. Each product group/combination has at least one product. Dora prefers to export machine made goods and avoid hand made goods. She finds out that only handmade goods are twice the only machine made-intermediate goods and the number of only intermediate goods is an even number. Whereas her close friend Sara prefers to export intermediate goods followed by only handmade goods.

37. **Sara and Dora prefer to export as many common products as possible in order to understand the regulatory conditions. Keeping their preferences intact, what is the maximum number of common products which can be exported by both of them?**

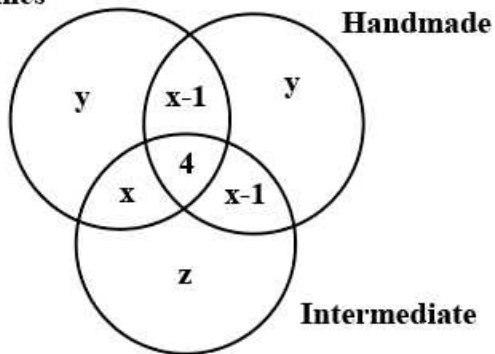
- A** 2
- B** 4
- C** 14

D Data Inadequate

Answer: A

Explanation:

Machines



It is given, $y = 2x$

$z > y$ and z is even

$y = 2x$

$2y + 3x + z + 2 = 30$

$7x + z = 28$

Only $x = 2$ and $z = 14$ satisfies the given conditions.

Maximum common products both Dora and Sara can export = Products common to Machines and

Intermediates only = $x = 2$

The answer is option A.

38. If another exporter Abeer prefers to export only intermediate goods, then the total number of products which both Abeer and Dora export are

A 24

B 20

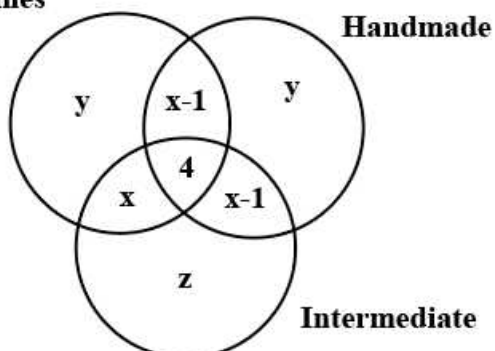
C 22

D 21

Answer: B

Explanation:

Machines



It is given, $y = 2x$

$z > y$ and z is even

$$y = 2x$$

$$2y + 3x + z + 2 = 30$$

$$7x + z = 28$$

Only $x = 2$ and $z = 14$ satisfies the given conditions.

The total number of products which both Abeer and Dora export = Intermediate + Machine - Homemade =

$$14 + 2 + 4 = 20$$

The answer is option B.

Instructions [39 - 40]

Based on the information answer the questions which follow.

Nautanki a famous play group from Eastern India is playing different shows every hour starting from 10am with a two hour lunch break from 1 pm to 3 pm after which the show resumes at 3 pm. Entry tickets for different shows are coded with 7 words each day. The same words are rearranged for different shows following a definite rule. For example:

Show 1 : Banana is the favourite fruit of Bina

Show 2 : the is of favourite Bina fruit Banana

Show 3 : of is fruit favourite Banana Bina the

And so on till the last show at 9 pm.

39. **If on some other day, for the fourth show the code is 'All of Delhi welcome to the show' Then the code for entry ticket for the first show on that day is**

A The of all welcome to show Delhi

B The of Delhi welcome all show to

C The of to welcome all show Delhi

D The of show welcome all to Delhi

Answer: C

Explanation:

Step 1 - Banana(1) is(2) the(3) favourite(4) fruit(5) of(6) Bina(7)

10 am - 1 2 3 4 5 6 7

11 am - 3 2 6 4 7 5 1

12 - 6 2 5 4 1 7 3

3 pm - 5 2 7 4 3 1 6

4 pm - 7 2 1 4 6 3 5

5 pm - 1 2 3 4 5 6 7

6 pm - 1 2 3 4 5 6 7

7 pm - 3 2 6 4 7 5 1

8 pm - 6 2 5 4 1 7 3

9 pm - 5 2 7 4 3 1 6

It is given that fourth show code is 'All of Delhi welcome to the show', i.e. 5 2 7 4 3 1 6. First show code will be 'The of to welcome All show Delhi'. The answer is option C.

40. If the entry code for the show at 7 pm is 'Do things to help others in difficulty' Then the code for entry ticket for the show at 12 noon of that day was

- A** Do things others help to in difficulty
- B** Do things to help others in difficulty
- C** Do things to help in difficulty others
- D** Do things difficulty help to others in

Answer: B

Explanation:

Step 1 - Banana(1) is(2) the(3) favourite(4) fruit(5) of(6) Bina(7)

10 am - 1 2 3 4 5 6 7

11 am - 3 2 6 4 7 5 1

12 - 6 2 5 4 1 7 3

3 pm - 5 2 7 4 3 1 6

4 pm - 7 2 1 4 6 3 5

5 pm - 1 2 3 4 5 6 7

6 pm - 3 2 6 4 7 5 1

7 pm - 6 2 5 4 1 7 3

8 pm - 5 2 7 4 3 1 6

9 pm - 7 2 1 4 6 3 5

It is given that the entry code for the show at 7 pm is 'Do things to help others in difficulty', i.e. 6 2 5 4 1 7 3. We need to find entry code for 12 noon show, i.e. 6 2 5 4 1 7 3 which is the same as the code for the show at 7 pm.

The answer is option B.

General knowledge

41. Which of the following is NOT an activity generally carried out by using a shell company?

- A** Production and Manufacturing
- B** Transfer Pricing
- C** Tax Evasion
- D** Raising funds for starting business

Answer: A

42. Match the Trophies and Cup associated with each Sport:

1. Badminton	a. Durand Cup
2. Hockey	b. Barra Belleck Cup
3. Table Tennis	c. Rangaswamy Cup
4. Football	d. BWF World Championships

A 1-d, 2-c, 3-b, 4-a

B 1-c, 2-b, 3-d, 4-a

C 1-d, 2-b, 3-c, 4-a

D 1-b, 2-c, 3-d, 4-a

Answer: A

43. Match the Biographies/Autobiographies of India's sport players:

1. The World Beneath His Feet	a. Milkha Singh
2. Imperfect	b. Mary Kom
3. The Race of My Life	c. Sanjay Manjrekar
4. Unbreakable	d. Nick Gopichand

A 1-d, 2-c, 3-a, 4-b

B 1-a, 2-b, 3-d, 4-c

C 1-c, 2-a, 3-d, 4-b

D 1-b, 2-a, 3-d, 4-c

Answer: A

44. Correctly match the following terms?

1. Isobront	a. Joins points with the same light intensity
2. Isocheim	b. Joins points with the same wind direction
3. Isogon	c. Joins points with the same mean temperature in winter
4. Isophote	d. Joins points of a given phase of a thunderstorm activity

A 1-d, 2-c, 3-b, 4-a

B 1-a, 2-b, 3-c, 4-d

C 1-d, 2-a, 3-b, 4-c

D 1-a, 2-c, 3-d, 4-b

Answer: A

45. Which of the following Telecom Operator has launched the app based Internet calling service "WINGS" in India?

- A BSNL
- B JIO
- C Airtel
- D Vodafone

Answer: A

46. Which of the following agreement is NOT related to the World Trade Organization (WTO)?

- A Agreement on Trade Related Intellectual Property Rights
- B General Agreement on Trade in Services
- C Multilateral Agreement on Transport and Logistics
- D Agreement on Agriculture

Answer: C

47. LIFT has been entrusted with the responsibility of setting up of India-Africa Institute of Foreign Trade as a Centre of Excellence in the area of International Business and Trade with Pan-Africa reach. This effort of Government of India will come under which of the following types of Diplomacy?

- A Track-III Diplomacy
- B Track-II Diplomacy
- C Track-V Diplomacy
- D Track-VII Diplomacy

Answer: B

48. Why are the Indirect 'Taxes termed as 'Regressive Taxing Mechanisms'?

- A Indirect taxes are charged uniformly to all income groups.
- B Indirect tax with different tax rates are charged differentially to different people.
- C Indirect taxes have progressive tax schedule, meaning high income group may pay more taxes.

D None of the above

Answer: A

49. Which of the following is the most exported agricultural commodity from India in terms of value?

A Tea

B Rice

C Rubber

D Cotton

Answer: B

50. Which of the following is a correct sequence of Sea Ports of India from 'South to North'?

A Cochin → Vizhinjam → Kozhikode → Mangalore

B Kozhikode → Vizhinjam → Cochin → Mangalore

C Vizhinjam → Cochin → Kozhikode → Mangalore

D Vizhinjam → Kozhikode → Mangalore → Cochin

Answer: C

51. Which of the following country is not a member of BIMSTEC?

A China

B Bhutan

C Nepal

D Myanmar

Answer: A

52. Which of the following industry is the not covered in the 'Index of Eight Core Industries' in India?

A Electricity

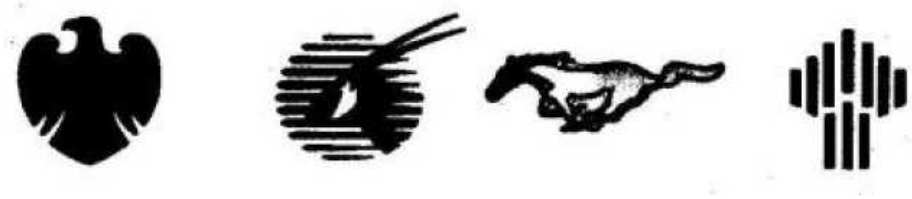
B Crude
Oil

C Natural Gas

D Pharmaceutical

Answer: D

53. Given below are the logos of various global firms. On the basis of their logo, select the correct functional area they operate in.



- A** Airlines, Automobiles, Banking, Petroleum
- B** Banking, Airlines, Automobiles, Petroleum
- C** Airlines, Petroleum, Automobiles, Banking
- D** Banking, Airlines, Petroleum, Automobiles

Answer: B

54. To strengthen its maritime network and enhance trade & economic ties, Government of India has decided to invest in a port in Indonesia. The name of this port is

- A** Sabang
- B** Samarinda
- C** Sibolga
- D** Sorong

Answer: A

55. Which of the following statement about American Businessman Elon Musk is not correct?

- A** His full name is Elon Reeve Musk
- B** He is Argentina-born American entrepreneur and businessman
- C** He founded www.X.com in 1999 (which later became PayPal), SpaceX in 2002 and Tesla Motors in 2003
- D** He is instrumental in leading the design and manufacture of electric Sedan and SUV cars

Answer: B

56. Rand is the currency of which of the following country?

- A** Tanzania
- B** Somalia
- C** Sudan
- D** South Africa

Answer: D

57. Bharat Desai and Neerja Sethi, the Indian-American couple has made USD 2 Billion jackpot by selling their company to French IT major. ATOS. Name the company they sold.

- A** Syntel
- B** Symtel
- C** Syotel
- D** Simtel

Answer: A

58. Which of the following company has designed the humanoid 'Sophia'?

- A** Hansen Robotics Ltd.
- B** Hanson Robotics Ltd.
- C** Hansan Robotics Ltd.
- D** Hemsan Robotics Ltd.

Answer: B

Reading-Comprehension

Instructions [59 - 61]

Read passage carefully. Answer the questions by selecting the most appropriate option (with reference to the passage).

PASSAGE 1

We use the word culture quite casually when referring to a variety of thoughts and actions. I would like to begin my attempt to define cultures by a focus on three of its dictionary meanings that I think are significant to our understanding of the general term-culture. We often forget that it's more essential usage is as a verb rather than as a noun, since the noun follows from the activities involved in the verb. Thus the verb, to culture, means to cultivate. This can include at least three activities: to artificially grow microscopic organisms; to improve and refine the customs, manners and activities of one's life; to give attention to the mind as part of what goes into the making of what we call civilization, or what was thought to be the highest culture. In short, one might argue that culture is the intervention of human effort in refining and redefining that which is natural, but that it gradually takes on other dimensions in the life of the individual, and even more in the interface between the individual and society. When speaking of society, this word also requires defining. Society, it has been said, is what emerges from a network of interactions between people that follow certain agreed upon and perceptible patterns. These are determined by ideas of status, hierarchy and a sense of community governing the network. They are often, but not invariably, given a direction by those who control the essentials in how a society functions, as for instance, its economic resources, its technology and its value systems. The explanation and justification for who controls these aspects of a society introduces the question of its ideology and often its form.

The resulting patterns that can be differentiated from segment to segment of the society are frequently called its cultures. Most early societies register inequalities, The access of their members to wealth and status varies. The idea of equality therefore has many dimensions. All men and women may be said to be equal in the eyes of god, but may at the same time be extremely differentiated in terms of income and social standing, and therefore differentiated in the eyes of men and women. This would not apply to the entire society. There may be times when societies conform to a greater degree of equality, but such times may be temporary. It has been argued that on a pilgrimage, the status of every pilgrim is relatively similar but at the end returns to inequalities. Societies are not static and change their forms and their rules of functioning. Cultures are reflections of these social patterns, so they also change. My attempt in this introduction is to explain how the meaning of a concept such as culture has changed in recent times and has come to include many more facets than it did earlier. What we understand as the markers of culture have gone way beyond what we took them to be a century or two ago. Apart from items of culture, which is the way in which culture as heritage was popularly viewed, there is also the question of the institutions and social codes that determine the pattern of living, and upon which pattern a culture is constructed. Finally, there is the process of socialization into society and culture through education. There is a historical dimension to each of these as culture and history are deeply intertwined. There is also an implicit dialogue between the present and the past reflected in the way in which the readings of the past changed over historical periods.

Every society has its cultures, namely, the patterns of how the people of that society live. In varying degrees this would refer to broad categories that shape life, such as the environment that determines the relationship with the natural world, technology that enables a control over the natural world, political-economy that organizes the larger vision of a society as a community or even as a state, structures of social relations that ensure its networks of functioning, religion that appeals to aspirations and belief, mythology that may get transmuted into literature and philosophy that teases the mind and the imagination with questions. The process of growth is never static therefore there are mutations and changes within the society. There is communication and interaction with other societies through which cultures evolve and mutate. There is also the emergence of subcultures that sometimes take the form of independent and dominant cultures or amoeba-like breakaway to form new cultures. Although cultures coincide with history and historical change, the consciousness of a category such as culture, in the emphatic sense in which the term is popularly used these days, emerges in the eighteenth century in Europe. The ideal was the culture of elite groups, therefore sometimes a distinction is made between what came to be called 'high culture'

that of the elite, and low culture' that of those regarded as not being of the elite, and sometimes described as 'popular'. Historical records of elite cultures in forms such as texts and monuments for instance, received larger patronage and symbolized the patterns of life of dominant groups. They were and are more readily available as heritage than the objects of the socially lower groups in society whose less durable cultural manifestations often do not survive. This also predisposed people to associate culture as essentially that of the elite.

59. **What is the central idea of the passage?**

- A** The author has explained the importance of religion and equality before God
- B** The author has defined culture and its sub-elements
- C** The author has explained the social inequalities existing in a society
- D** The author has explained the contextual metamorphosis of culture in different contexts

Answer: D

Explanation:

The author explains cultural metamorphosis in different context.

He then attempts to introduce the different facets of cultural metamorphosis and explains them in different contexts. Hence, the correct answer is option D

60. **According to the author what are the characteristics of 'Society'?**

- A** Society consists of rich and poor
- B** Society consists of relationships between people who have agreed to follow certain social norms
- C** Society consists of inequalities between people who have access to and control over resources
- D** Society consists of people who go on pilgrimage together

Answer: B

Explanation:

"Society, it has been said, is what emerges from a network of interactions between people that follow certain agreed upon and perceptible patterns. These are determined by ideas of status, hierarchy and a sense of community governing the network. They are often, but not invariably, given a direction by those who control the essentials in how a society functions, as for instance, its economic resources, its technology and its value systems."

From the above lines it is clear that option B is the correct answer.

61. **With reference to the above passage, what are the important elements of 'Culture'?**

- A** Social inequalities, wealth, status, social norms
- B** High culture elite and low culture popular
- C** History, education, religion, beliefs, social patterns
- D** Growth, civilisation, communication, texts and monuments

Answer: C

Explanation:

"Every. society has its cultures, namely, the patterns of how the people of that society live. In varying degrees this would refer to broad categories that shape life,"

"There is a historical dimension to each of these as culture and history are deeply intertwined. There is also an implicit dialogue between the present and the past reflected in the way in which the readings of the past changed over historical periods."

Consider the above two lines. It can be inferred from these lines that option C is the correct answer.

Instructions [62 - 64]

Read passage carefully. Answer the questions by selecting the most appropriate option (with reference to the passage).

PASSAGE 2

Today, we have specialists in various professions, but many among them are unconcerned with the world beyond their own specialization. It is sometimes said that they are replacing the public intellectual. But the two are not identical. There are many more academics, for instance, than existed before. But it seems that most refer not to confront authority even if it obstructs the path of free thought. Is this because they wish to pursue knowledge undisturbed, or because they are ready to discard knowledge should authority require them to do so? Or does association with national or international agencies require that critical assessments of social thought and action remain sotto voce? Today, as always, the public intellectual is expected to take a position independent of those in power, enabling him or her to question debatable ideas, irrespective of who propagates them. Reasoned critiques are often the essential starting point. The public intellectual has to see himself or herself as a person who is as close to being autonomous as is possible, and more than that, be seen by others as such.

An knowledgeable professional status makes it somewhat easier to be autonomous. Such status brings with it another kind of authority, conceded, even if grudgingly, by professional peers and this does make some small impact on the non-professional world. The public intellectual of today, in addition to being of such a status, has to have at the same time a concern for what constitutes the rights of citizens. particularly on issues of social justice, and further, there should be a readiness to raise these matters as public policy. The combination of drawing upon the professional respect that a person has garnered, together with a concern for society, can sometimes establish the moral authority of that person and ensure public support. This is a conceded qualification and not a tangible one. In the past it was those who had distanced themselves somewhat from society who were believed not to have a vested interest in the changes they were suggesting. Although this was not always so, we know that close associations, such as formal affiliation to a political party, can inhibit free-thinking and criptions for action, even if it has the advantage of providing a certain leverage to the suggestions being ade. As an attitude of mind, autonomy is more readily expected of the professional specialist or the demic. Such persons, and they are not the only ones, can suggest alternative ways of thinking, even about ems of the larger society. Their thinking should

emerge from reasoned, logical analyses. Yet academics today are hesitant to defend even the right to make what might be broadly called alternative, if not rational interpretations, however sensitively they may be expressed. This is evident from the ease with which books are banned and pulped, or demands made that they be burned, and syllabuses changed under pressure from religious or political organizations, or the intervention of the state. Why do such actions provoke so little reaction among many academics and professionals? The answer that is usually given is that they fear the instigators who are persons with the backing of political authority. But is this the only answer?

Is it assumed that opinions about governance and society must hinge on ideologies linked to political parties and as a result there can be no thinking about how to configure society in a manner that is independent of a necessary commitment to political parties? Surely in this day and age, it is possible to be an independent liberal in this country with ideological commitments that are not determined solely by political parties? Being a liberal is an attitude of mind that determines the fight for space in a society when that society resists ethics and reasoned thinking. The understanding of what one is battling for assumes an ideological direction but this does not require association with a political party. And there should also be the freedom to choose one's position on an issue and this position need not be in conformity with the ideological take of a particular political party on every occasion. The public intellectual has, by definition, to be liberal, that is, to insist that there be space to present varying perspectives and that wherever possible, reason and ethics should have primacy in whatever debates are taking place. This is not a new definition and has been a recognizable part of the interface between knowledge and society since earliest times. Approximations to orthodoxy and orthopraxy have always been contested by similar approximations to heterodoxy although those leading the charge do not always have or need to have the same social identity. This is apparent among people and situations in the Indian past yet we have often ignored it or failed to recognize it. How an intellectual even without being a public intellectual, requires a more than average knowledge in his/her professional specialization and beyond that a familiarity with the context of that knowledge: how did it come about and what are the implications for the people who use that knowledge. To be a technician (or be technically accomplished) in a specialization, however good, is not sufficient. An intellectual perspective requires that the specialized knowledge one possesses should be related to social concerns where required and to other branches of knowledge as well. Added to this it helps if that knowledge can be contextualized in an accessible way for a wider range of people to understand facets of the variegated world in which we live, and to which understanding the specialization contributes. The public intellectual uses such foundations in his/her thinking in order to extend the understanding of the world we inhabit, and to do so by insisting on space for debate and the right to informed opinion.

62. According to the author, 'Public Intellectual' is one who

- A is very knowledgeable, possesses a postgraduate or higher degree and is a specialist in his field
- B is liberal minded, considers varying perspectives. takes an independent position and is concerned for greater good
- C has a professional status, works with national and international agencies and is an expert in specific domain
- D has the backing of political authority, speaks and writes sensitively about various issues and is concerned about social policy

Answer: B

Explanation:

In third paragraph, it is given 'the public intellectual has, by definition, to be liberal, that is, to insist that there be space to present varying perspectives and that wherever possible, reason and ethics should have primacy in whatever debates are taking place.' Option B is the appropriate answer.

The answer is option B.

63. How does the author differentiate between Public Intellectuals of the past and today?

- A** Public intellectuals of the past were merely academicians and idealists. Public intellectuals of today are more learned and specialists in their own field
- B** Public intellectuals of the past were not concerned about matters of social policy or social concerns. Public intellectuals of today are technically accomplished and believe in reasoned critiques.
- C** Public intellectuals of the past were more concerned with rational thought Public intellectuals of today are more sensitive to different perspectives
- D** Public intellectuals of the past were distanced from vested interests, liberal in thought and spoke up about issues concerning society. Public intellectuals of today are concerned about being politically correct while expressing views

Answer: D

Explanation:

In second paragraph, it is clearly mentioned that public intellectuals in the past were liberal in thought and were more concerned about the society and public intellectuals today are more concerned about being political correct. The answer is option D.

64. With reference to the above passage, explain the relationship between Orthodoxy, Orthopraxy and Heterodoxy as proposed by the author as applicable to the Public Intellectual'

- A** The 'Public Intellectual' can be both orthodox and orthoprax but not heterodox
- B** The 'Public Intellectual' can be heterodox but not orthodox and orthoprax
- C** The 'Public Intellectual' can be both orthoprax and heterodox but not orthodox
- D** The 'Public Intellectual' can be orthodox but not heterodox and orthoprax

Answer: B

Explanation:

orthodox - following or conforming to the traditions and beliefs of particular religion or philosophy (lack of other knowledge)

orthoprax - an intellectual perspective, the one who possesses knowledge to social concerns as well.

heterodox - the one who expands his sphere to external world

Heterodoxy matches with author's idea on public intellectual. The answer is option B.

Instructions [65 - 68]

Read passage carefully. Answer the questions by selecting the most appropriate option (with reference to the passage).

PASSAGE 3

We love information. Especially in times of crisis. Have you ever noticed your tendency to become glued to the television or Internet when disaster strikes? It is human nature to try to gather as much information as possible, to make sense and create meaning when we don't understand what is happening. We seek information for another reason too, control. We operate under the illusion that if we can gain more information, we will not only understand what is happening, we might just be able to control it. I am not suggesting that there is no value to information or to clearly defined reporting and accountability relationships for routine business operations. I am instead calling out the temptation that an information-centred approach to agility offers: there's a desire to settle into the illusion that information will give you control, when in many situations it is simply not possible to gather or process enough information to be effective when it counts.

Recognizing that there are many situations that you not only cannot control but cannot predict is a radical mind-set and practice shift for most. It requires that you decide whether your goal is to reduce the perception of uncertainty or to actually become more effective in its midst. It also involves more than a simple reconfiguration of the organisation chart and job descriptions. It requires relinquishing the illusion of control that lies at the very foundation of most management training and business practice. This shift is being made in one of the most hierarchical, command-and-control organizations in the country, the United States military. Recognizing the insidious nature of information age strategies and their tendency to lead to either analysis paralysis or the false security of convenient stories, the U.S. military has begun to make a fundamental shift in its approach to VUCA (volatility, uncertainty, complexity, and ambiguity), a shift from information to interactions. This change does not begin with restructuring and redeployments but with a fundamental shift in mind-set. In fact, the term VUCA was first coined by the U.S. Army War College to describe increasingly complex and unpredictable combat conditions." VUCA has become shorthand for the reality of life in the twenty-first century. Most business approaches to VUCA focus on strategies to reduce uncertainty. These strategies tend to centre around gaining greater control, including amassing more and better information, minimizing risk, and improving planning and analysis. While risk and uncertainty reduction are valid strategies, they do not necessarily make an organization more agile, for two reasons: (1) collecting more and better information takes time and may foster the illusion of control and comfort when, in reality, it is impossible to gather all available information in complex, changing contexts, let alone fully analyze and make meaning of, it and (2) planning and analysis are dependent on relatively stable contexts. Another liability of information-centred approaches is that they typically lead to more questions and the need to gather more information to reduce the uncertainty created by the information already collected. There is an even more significant liability of the information-centred approach to agility: our preconceptions lead us to filter out information that does not align with our expectations. Under the stress of an unexpected challenge or opportunity, our ability to access our higher thinking capacity can be reduced, leading us to fall back on the version of the story we expected. Warnings of terrorist threats before 9/11 and potential malfunctions of crucial components prior to the Challenger space shuttle disaster went unheeded because they did not fit the narrative that was co-constructed by leaders during years of experience and expectation. Agile leaders, teams and organizations know they cannot afford to get caught up in a story. They are instead learning how they might be more effective by focusing on their interactions with one another and with the available information in the dynamic present moment.

Let me emphasize that this is a shift away from an overreliance on information. I am not suggesting you

curtail important industry and market data analysis, or take this as encouragement to blindly make decisions when further investigation is warranted. I am encouraging you to shift away from the false comfort such information can offer, and toward the relational context in which you make sense of it, decide and act. When we make the shift from information to interaction, we may be called to shift more than our relationship to external information; we may need to shift the way we perceive ourselves as well. The agility shift requires that we value our capacity to connect and build relationships over-or at least as much' as-our hard-won expertise. Years of experience, training and credentials are, of course, still valuable. But their value is minimal without the networks to which the skills, knowledge, experience, and resource awareness are linked. In other words, separating the process of "knowing what" and "knowing how" from the process of "knowing who" significantly diminishes agility capacity. The shift from information to interaction values the human system in which all meaning and action take place. Rather than problematizing this system as non-objective or messy, the agility shift embraces it and engages it more fully. You may not be able to control or predict what happens. but with a conscious, continuous commitment to interacting within your web of relationships and resources, you will be more effective than you ever imagined. The agility shift is first and foremost a shift in mind-set. This mind-set values interactions within the dynamic present moment. It is also a shift from the false comfort of "a plan" to achieving a state of readiness to find opportunity in the unexpected.

65. **With reference to the above passage what is the author's stand with regard to Information'?**

- A** The author considers information as important in order to reduce risk and uncertainty while taking decisions
- B** The author considers information as important for human beings as they love information
- C** The author considers information as necessary but an obstacle in taking quick decisions by organisation leaders
- D** The author considers that there is an over reliance on information leading to complacency in decision making

Answer: D

Explanation:

The third paragraph it is mentioned that there is an over reliance on information leading to complacency in decision making. Option D captures the point mentioned in the passage. Option C is contradictory. Option A is partially correct, author also mentions that there need to be a shift in our thoughts and actions. Option B is incorrect as it says information is important. The answer is option D.

66. **According to the author what causes 'analysis-paralysis'?**

- A** Today's leaders are not able to take decisions because of lack of policy thereby causing paralysis of policy
- B** Today's leaders have access to lot of information and spend more time on analysing rather than acting upon it

- C** Today's leaders are not able to take decisions because they do not have the skills to analyse information
- D** Today's leaders are paralysed because they do not have networking with other leaders

Answer: B

Explanation:

In second paragraph it is mentioned that how today's leaders have more information and spend time on analysing the information instead of reacting. Options B captures the point mentioned in the passage. The answer is option B.

67. **With reference to the above passage, 'agility shift' is**

- A** the uncertainty reduction mind set of leaders to gather more information in order to take effective decisions
- B** the mind set of leaders towards using the VUCA approach in order to take effective decisions
- C** the mind set of leaders to reduce over reliance on information and move to interaction in order to take effective decisions
- D** the mind set of leaders to seek more information and analysis in order to take effective decisions

Answer: C

Explanation:

In second and thirds paragraphs, author clearly mentions the shift required from information to interaction to take effective decisions. In third paragraph, author also mentions that the agility shift requires that we value our capacity to connect and build relationships over-or at least as much' as-our hard-won expertise. Therefore, the answer is option C.

68. **According to the author, why do we 'love' information?**

- A** Today the Internet and television provide us with easy access to lot of information and entertainment
- B** Information helps us in anticipating and preventing crisis like 9/11.
- C** Information provides us with an illusion of control and we remain in our comfort zone
- D** Information helps us in getting more knowledge and enhancing expertise

Answer: C

Explanation:

In first paragraph, it is mentioned that we operate under the illusion that if we can gain more information, we will not only understand what is happening, we might just be able to control it. Among the given options, option C is the most appropriate one.

The answer is option C.

Instructions [69 - 71]

Read passage carefully. Answer the questions by selecting the most appropriate option (with reference to the passage).

PASSAGE 4

While majoring in computer science isn't a requirement to participate in the Second Machine Age, what skills do liberal arts graduates specifically possess to contribute to this brave new world? Another major oversight in the debate has been the failure to appreciate that a good liberal arts education teaches many skills that are not only valuable to the general world of business, but are in fact vital to innovating the next wave of breakthrough tech-driven products and services. Many defenses of the value of a liberal arts education have been launched, of course, with the emphasis being on the acquisition of fundamental thinking and communication skills, such as critical thinking, logical argumentation, and good communication skills. One aspect of liberal arts education that has been strangely neglected in the discussion is the fact that the humanities and social sciences are devoted to the study of human nature and the nature of our communities and larger societies. Students who pursue degrees in the liberal arts disciplines tend to be particularly motivated to investigate what makes us human: how we behave and why we behave as we do. They're driven to explore how our families and our public institutions-such as our schools and legal systems-operate, and could operate better, and how governments and economies work, or as is so often the case, are plagued by dysfunction. These students learn a great deal from their particular courses of study and apply that knowledge to today's issues, the leading problems to be tackled, and various approaches for analyzing and addressing those problems.

The greatest opportunities for innovation in the emerging era are in applying evolving technological capabilities to finding better ways to solve human problems like social dysfunction and political corruption; finding ways to better educate children; helping people live healthier and happier lives by altering harmful behaviors; improving our working conditions; discovering better ways to tackle poverty; Improving healthcare and making it more affordable; making our governments more accountable, from the local level up to that of global affairs; and finding optimal ways to incorporate intelligent, nimble machines into our work lives so that we are empowered to do more of the work that we do best, and to let the machines do the rest. Workers with a solid liberal arts education have a strong foundation to build on in pursuing these goals. One of the most immediate needs in technology innovation is to invest products and services with more human qualities. with more sensitivity to human needs and desires. Companies and entrepreneurs that want to succeed today and in the future must learn to consider in all aspects of their product and service creation how they can make use of the new technologies to make them more humane. Still, many other liberal arts disciplines also have much to provide the world of technological innovation. The study of psychology, for example, can help people build products that are more attuned to our emotions and ways of thinking. Experience in Anthropology can additionally help companies understand cultural and individual behavioural factors that should be considered in developing products and in marketing them. As technology allows for more machine intelligence and our lives become increasingly populated by the Internet of things and as the gathering of data about our lives and analysis of it allows for more discoveries about our behaviour, consideration of how new products and services can be crafted for the optimal enhancement of our lives and the nature of our communities, workplaces and governments will be of vital importance. Those products and services developed with the keeneSt sense of how they' can serve our human needs and complement our human talents will have a distinct competitive advantage. Much of the criticism of the liberal arts is based on the false assumption that liberal arts students lack rigor in comparison to those participating in the STEM disciplines and that they are 'soft' and

unscientific whereas those who study STEM fields learn the scientific method. In fact the liberal arts teach many methods of rigorous inquiry and analysis, such as close observation and interviewing in ways that hard science adherents don't always appreciate. Many fields have long incorporated the scientific method and other types of data driven scientific inquiry and problem solving. Sociologists have developed sophisticated mathematical models of societal networks. Historians gather voluminous data on centuries-old household expenses, marriage and divorce rates, and the world trade, and use data to conduct statistical analyses, identifying trends and contributing factors to the phenomena they are studying. Linguists have developed high-tech models of the evolution of language, and they've made crucial contributions to the development of one of the technologies behind the rapid advance of automation-natural language processing, whereby computers are able to communicate with the, accuracy and personality of Siri and Alexa. It's also important to debunk the fallacy that liberal arts students who don't study these quantitative analytical methods have no 'hard' or relevant skills. This gets us back to the arguments about the fundamental ways of thinking, inquiring, problem solving and communicating that a liberal arts education teaches.

69. **What is the central theme of the passage?**

- A** A combination of STEM skills as well as skills of liberal arts are required by Companies in order to develop products that are most relevant today
- B** Companies need to develop products that are technologically sophisticated and use lot of data driven technology
- C** The Second machine Age is causing disruption and is going to require a higher number of workers specialised in STEM
- D** Students with liberal arts background will be able to solve all the social problems as they are experts in the use of quantitative analytical methods

Answer: A

Explanation:

Option A captures the main point of the passage, i.e. STEM skills and social liberal skills both are required to develop products which are most relevant today. Option B and C do not consider social liberal skills. Option D is too extreme by saying can solve all the problems. The answer is option A.

70. **How can companies gain an edge in today's era of technological innovation?**

- A** By creating products and services that are technologically sophisticated which can perform a wide range of functions using scientific methods
- B** By creating products and services that are affordable, humane and do the work that humans don't want to do
- C** By creating products and services that are technologically advanced and are endowed with human qualities that can be used to solve variety of social problems
- D** By creating products and services that are similar to human beings and use data based problem solving methodologies

Answer: C

Explanation:

Option C best captures the point mentioned in the passage. In the passage, nowhere it is discussed about the price of products. Therefore, option B is incorrect. Option A did not mention the point on how products should help to deal with variety of social problems. In the passage, nowhere it is mentioned that products should be similar to human beings. The answer is option C.

71. **What is the author's opinion with regard to the contribution of students of liberal arts and those of STEM, in this new technological age?**

- A** Students of liberal arts have good soft skills but are not skilled with quantitative analytical methods, while STEM students possess both of these
- Students of STEM can contribute effectively by applying rational decision making
- B** algorithms. Liberal Arts students provide understanding of social issues but cannot contribute to the development of technological innovations
- Students of STEM are better positioned to participate in the Second machine Age as they
- C** have technical skills and understand machine language. Liberal Arts students are not suitable as they do not have degrees in computer science
- Students of Liberal Arts because of their knowledge of human nature can contribute
- D** effectively to technological innovations with human qualities. STEM students can contribute to technological innovations but not to human aspects

Answer: D

Explanation:

Options A and C are clearly incorrect. Option B is incorrect because author gives examples where liberal arts students contributed to technological innovations. The answer is option D.

Instructions [72 - 74]

Read passage carefully. Answer the questions by selecting the most appropriate option (with reference to the passage).

PASSAGE 5

For policy makers to this day. GDP remains the definitive yardstick for economic performance, permitting them to assess the health and progress of a nation's economy and, by extension, people's lives. Yet GDP's dominance has brought criticism. It fails to capture changes to an economy's structure, such as the shifts to a service-led or technology-based economy. Some have protested that it fails to capture the unofficial or black market economy. Others have asserted that any purely economic indicator by itself may be inadequate to truly measure society's progress. It is therefore no surprise that over the last several decades, economists, • sociologists, and other academics have devised other metrics for tracking happiness, well-being, and social progress, some of which have garnered a substantial following. Implicit in these metrics is a challenge to GDP as the dominant measure of human progress-despite the fact that these measures sometimes themselves rely on GDP or some variance of GDP and come with limitations of their own. Even so, GDP remains a compelling measure of economic as well as social progress inasmuch as improvements in economic GDP translate into social progress. Policymakers have nevertheless become interested in these alternative measures, which, even if they do not displace GDP as the most

prominent measure of economic growth, have value in complementing GDP in future assessments for economic and living standard progress. Furthermore, these proposed additions to GDP remind us that the endgame for public policy is progress and improved living standards rather than GDP growth for growth's sake. Nonetheless, these rankings reveal that consistently richer Countries (in terms of GDP) rank at the top of the indices and poorer ones at the bottom. For example, happiness indices reflect a demand that happiness be recognized as a criterion for government policy. First published in 2012, the World Happiness Report measures happiness by indexing GDP per capita alongside social support, life expectancy, freedom, generosity, and the absence of corruption. Of the 155 Countries collated in the 2017 World floppiness Report, the ten happiest countries, in descending order, are Norway, Denmark, Iceland, Switzerland, Finland, the Netherlands, Canada, New Zealand, Australia, and Sweden. The ten least happy countries, beginning with the least happy, are the Central African Republic, Burundi, Tanzania, Syria, Rwanda, Togo, Guinea, Liberia, South Sudan, and Yemen: While the United States is the largest country in GDP terms, it ranks fourteenth on the 2017 happiness index. A more traditional measure that goes beyond GDP alone is the United Nations' Human Development Index (HDI). First published in 1990, the HDI assesses longevity, education, and income across each nation's population, on the premise "that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone." The HDI reveals how two countries with the same level of gross national income (GNI)-that is, the total domestic output (GDP) plus foreign GDP generated by citizens abroad, minus domestic output created by foreigners-can end up with such different outcomes. In this way, it allows observers to compare the relative effectiveness of different policy choices and capital investments. In this index, Norway, Australia, and Switzerland rank at the top, with GNIs above US\$40,000, and the Central African Republic, Niger, and Chad arc at the bottom of the index, all with GNIs of less than US\$2,000 per capita. Some of these measures move beyond individuals and attempt a holistic assessment of the health of society. Since its founding in 2012, the Social Progress Imperative has offered a Social Progress Index that examines a range of social and environmental indicators beyond GDP, from access to electricity to religious tolerance; to measure three distinct dimensions of social progress: Basic Human Needs, Foundations of Wellbeing, and Opportunity. The 2017 Social Progress Index covers 133 countries and 94 percent of the world's population. The world as a whole would score 64.85 in Social Progress based on an average of all countries. On average, the top cluster of fourteen countries ranked as having "very high social progress"-including Denmark, Finland, Iceland, Norway, and Switzerland among others-scores 94.92 on Basic Human Needs, Foundations of Wellbeing, and Opportunity. The cluster of seven countries described as having 'very low social progress' include the Central African Republic, Afghanistan, Chad, Angola, Niger, Guinea, and Yemen. For this cluster the average dimension scores of Basic Human Needs, Foundations of Wellbeing, and Opportunity are 42.67, 45.42, and 27.74. What can we learn from these various indices? While noneconomic factors such as health, well-being, and quality of life matter to humanity, economic measures such as GDP generally correlate to success in the other areas, with a small amount of variation among those who are awarded the top spot. In a nutshell, economic growth underpins all else; a country needs economic growth to achieve happiness, well-being, and ultimately human progress. To be sure, GDP estimates provide a snapshot of GDP at a single point in time, but nothing more. A large GDP can indicate that a country is rich yet mask that its economy might be struggling and scarcely growing.

72. What is the author's opinion regarding GDP as a measure for economic performance of a country?

- A** GDP is the yardstick for measuring economic growth of a country
- B** GDP provides policy makers with definitive steps to be taken for improving economic performance

- C** GDP provides accurate but incomplete information of an economy at a single point of time
- D** GDP is the only reliable measure that can be used for framing economic policy

Answer: C

Explanation:

In last paragraph it is mentioned that GDP estimates a snapshot of GDP (only economic perception) at a single point in time, but nothing more. A large GDP can indicate that a country is rich yet mask that its economy might be struggling and scarcely growing. This implies that GDP provides accurate and incomplete information.

The answer is option C.

73. What are the characteristics of non GDP measures?

- A** Non GDP measures are subjective in nature and cannot be relied upon
- B** Non GDP measures are not standardized and not universally accepted 'across countries
- C** Non GDP measures provide data regarding living standards, development, and social progress
- D** Non GDP measures cannot contribute to public policymaking

Answer: C

Explanation:

As per the passage, Non GDP measures such as HDI, SPI goes beyond the economic factors, i.e. social progress, education, well being, quality of life etc., Option C captures the point correctly. The answer is option C.

74. According to the passage, what is the difference between using just GDP measures and using non GDP measures in policy making?

- A** Economic measures such as GDP generally correlate to success in other areas and lead to social progress but non GDP measures do not
- B** GDP measure contribute effectively towards policy making as they provide objective and actionable inputs but non GDP measures are open to interpretation
- C** Non GDP measures are able to provide information on gaps in public policy making whereas GDP provides information only on economic performance
- D** Non GDP measures are not accepted by most countries but GDP measures are accepted universally

Answer: C

Explanation:

Option D is incorrect as author mentioned countries which accept Non-GDP measures. Second point

mentioned in option B is nowhere mentioned in the passage. In the passage, it is mentioned that Non-GDP measures lead to social progress. Therefore, option A is incorrect.

The answer is option C.

English

Instructions [75 - 77]

Create a word using all jumbled alphabets as provided in the table below and identify its appropriate meaning.

75.

	O	U
A	L	
I	C	S
Q	U	O

A Verbose

B Taciturn

C Rational

D Alluring

Answer: A

Explanation:

The word we get on solving the puzzle is "**loquacious**" which is the tendency to talk a lot. While there is no option which gives an exact synonym, **Verbose** (A) refers to a person who uses more words than necessary to express himself.

76.

C	B	A
	R	E
A	M	

A Innocent

B Tanied

C Gruesome

D Pleasing

Answer: C

Explanation:

The word we get on solving the puzzle is "**macabre**" which is an adjective meaning disturbing or **gruesome** (C).

77.

P	E	I
T		Y
	K	N
E	R	C

A Spiteful

B Careless

C Ignorant

D Fussy

Answer: D

Explanation:

The word we get on solving the puzzle is "**pernickety**" which means to give too much importance to trivial details or in other words, **fussy** (D).

Instructions [78 - 79]

Choose the correct answer from the options provided below to indicate the most appropriate word to complete the pair.

78. **CICERONE: GUIDE::DRAGOMAN:.....?**

A Cavalry officer

B Interpreter

C Hauler

D Turnkey

Answer: B

Explanation:

Cicerone is a person who gives information about a place or a monument to sightseers (like a tour guide). Dragoman is a person who interprets languages. Hence the word we are looking for is Interpreter (B).

79. **SYLVAN: WOODS:: TERRESTRIAL:.....?**

A Urban

B Fear

C Earth

D Planets

Answer: C

Explanation:

Sylvan is a word that describes something associated with woods.

Similarly, terrestrial is a word that is used to describe something that is associated with earth.

Hence the answer is Earth (C).

Instructions [80 - 82]

Select the most appropriate pair of words from the given option to meaningfully complete sentence(s).

80. **Despite being the partner in the relationship, the franchiser does not always have all the**

A sincere.....limitations

B authoritative.....legalities

C dominant.....advantages

D active.....losses

Answer: C

Explanation:

Here we are looking for words such that the second word is usually seen as a result of the first and we should keep in mind that the sentence is about a business partnership (from the use of the word franchiser). So we can eliminate options A and B.

Option D is a good choice, but it would have been better if the second word was of a more positive essence.

Hence we go with option C, which fulfils all the criteria.

81. **With large classes, it is difficult for teachers to regular essay type questions for homework because long answers would take too much time.**

A consider.....writing

B revalue.....concise

C pursue.....feeling

D handle.....weighing

Answer: D

Explanation:

The sentence implies that evaluating long essays is not easy for teachers. Hence, the right pair of words in the given context is handle and weighing. The answer is option D.

82. 'Patriotism is the last refuge of scoundrel', says Johnson. In the modern world where the cunning selfish people and the hard working, conscientious people The quotation holds good.

- A dominate.....suppress
- B thrive.....suffer
- C enjoy.....mutilate
- D empower.....subjected

Answer: B

Explanation:

Starting with the second blank, the word we are looking for should have the essence of oppression or suffering and should be in the plain form. So, the first blank should contain a word that means the opposite of the second blank. Thrive and Suffer are the only two words from the option that correctly fill the first and second blank, respectively.

Instructions [83 - 84]

Match the correct answers.

83.

1. Adonis	a. An idler or loafer
2. Don Juan	b. An awkward, rough fellow
3. Wastrel	c. A handsome man
4. Lout	d. A rake or seducer

- A 1-c, 2-b, 3-d, 4-a
- B 1-b, 2-d, 3-a, 4-c
- C 1-b, 2-a, 3-d, 4-c
- D 1-c, 2-d, 3-a, 4-b

Answer: D

Explanation:

- 1. Adonis is a Greek mythological character, and in English, the word means a handsome young man. (c)
- 2. Don Juan is a legendary Spaniard known as a great lover or seducer. (d)
- 3. Wastrel means someone good for nothing. (a)
- 4. A lout is an aggressive man or boy. (b)

84.

1. En Masse	a. Adjective
2. Fetter	b. Verb
3. Malinger	c. Adverb
4. Raspy	d. Noun

- A 1-c, 2-d, 3-b, 4-a

B 1-b, 2-a, 3-d, 4-c

C 1-d, 2-b, 3-c, 4-a

D 1-d, 2-c, 3-a, 4-b

Answer: A

Explanation:

1. En Masse means "in a group". It qualifies the action or verb. Hence it is an adverb. (c)
2. Fetter is an object used to restrain prisoners. It is a noun. (d)
3. Malingering is the act of pretending to be ill. It is a verb. (b)
4. Raspy is a word used to describe a sound that is hoarse or harsh. Hence it is an adjective. (a)

Instructions [85 - 86]

Identify the error in the sentences given below.

85. **The job is much worse than I expected. (a) / If I would have realised (b)/ how awful it was going to be (c) / I would not have accepted it. (d)**

A a

B b

C c

D d

Answer: B

Explanation:

The job is much worse than I expected. If I "**had**" realised how awful it was going to be, I would not have accepted it.

86. **While luminaries of the dance world (a)/has no dearth of opportunities to display their art (b). /upcoming dancers suffer from (c)/an unfortunate lack of exposure (d).**

A a

B b

C c

D d

Answer: B

Explanation:

The usage of "**has**" in (b) is incorrect as "luminaries" is plural.

Instructions [87 - 90]

Identify the origin/ source of the words given below.

87. **Auto-da-fe (Noun)**

The ceremony for pronouncing judgment by the Inquisition which was followed by the execution of sentence by secular authorities; broadly, the burning of a heretic.

- A** Latin
- B** Italian
- C** Portuguese
- D** French

Answer: C

Explanation:

Adapted from the Portuguese word "Auto-da-fe", it has the same meaning.

88. **Voracious (Adjective)**

To devour

- A** Hebrew
- B** Greek
- C** German
- D** Latin

Answer: D

Explanation:

"Voracious" means to devour enormous quantities of food. It traces its origin to the Latin word "vorare" which means the same.

89. **Echt (Adjective)**

True, genuine, real and authentic

- A** German
- B** Latin
- C** Italian
- D** Greek

Answer: A

Explanation:

"Echt", is adapted from the same word in German means typical or authentic.

90. **Aegis (Noun)**
Under the protection of

- A** Russian
- B** Greek
- C** French
- D** Arabic

Answer: B

Explanation:

The word aegis means protection or support and the word is derived from the Greek mythology where "aegis" is the shield of Zeus.

Instructions [91 - 92]

Choose the appropriate answer for rephrasing the underlined portion of the sentence.

91. **Sky-Airlines recently announced aggressive cost-cutting measures ranging from a new airport check-in procedures that encourage passengers to use self-service kiosks and reductions in the size of its fleet.**

- A** such as improvement of airport check-procedures, encouragement of passengers to use self-service kiosks and reducing
- B** ranging from new airport check-in procedures that encourage passengers to use self-service kiosks and to reductions
- C** ranging from new airport check-in procedures that encourage passengers to use self-service kiosks to reductions
- D** ranging from new airport check-in procedures that encourage passengers to use self-service kiosks to reducing

Answer: C

Explanation:

Options A and D have errors in parallelism. Option B mentions 'from...and to' which is not correct. Option C is correct, considering all the aspects. The answer is option C.

92. **Although the square root of a negative number has no real value, it is not necessarily true that equations involving imaginary numbers like these are practically inapplicable.**

- A** equations involving these inapplicable imaginary numbers are practical
- B** equations involving such imaginary numbers have no practical applications
- C** there is no practical applications for equations involving such imaginary numbers as these

- equations involving imaginary numbers such as these are inapplicable
D practically

Answer: B

Explanation:

The idea conveyed by the whole sentence is that while the square root of a negative number has no real value, equations involving such numbers may have practical applications. Due to the usage of "not necessarily," the answer we are looking for should be phrased as "such equations have no practical applications" and the double negation will give the sentence a positive essence.

The only answer that conveys the required sense is B.

Instructions [93 - 94]

The sentences given in each question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a letter. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph.

93. **A. But, clearly, the government still has the final say.**
B. In the past few years, the Reserve Bank of India might have wrested considerable powers from the government when it comes to monetary policy.
C. The RBI's announcements on certain issues become effective only ,after the government notifies them.
D. Isn't it time the government vested the RBI with powers to sanction such changes, leaving their ratification later?

- A** ACBD
B ACDB
C DACB
D BACD

Answer: D

Explanation:

B is an opening statement in which it is suggested that that RBI has taken over several aspects of monetary policies from the government. A indicates that despite having certain powers, the final decision rests with the government. C elaborates A with an example. D poses a question for the reader to decide after reading all the above statements.

Hence the correct order is BACD.

94. **A.** All levels of demand, whether individual, aggregate, local, national, or international are subject to change.
B. At the same time, science and technology add new dimensions to products, their uses and the methods used to market them.
C. Aggregate demand fluctuates with changes in the level of business activity, GNP and national income.
D. The demand of individuals tend to vary with changing needs and rising income.

A BCAD

B ADCB

C CBDA

D DCAB

Answer: B

Explanation:

Sentence A gives the basic premise of what is being discussed in the passage i.e. that all demands are subject to change. Thus, sentence A is apt as the opening sentence of the paragraph. D further discusses the individual demands and C discusses aggregate demand. DC discuss the demands chronologically and hence ADC is the mandatory pair. B is driving the paragraph on a tangential nuanced idea apart from demand. Thus ADCB is the right choice.

Quant

95. **A** Business Group has 3 Companies X,Y,Z and a Trust P which is engaged in charitable activities. Each group company has to donate 5% of its own funds to the Trust, excluding the loan which the company has taken from other companies of the group. X has given a loan to Y which is equivalent to 10% of the funds of Y. After receiving the loan, Y has funds which are 2 times the funds of Z. If Z gave Rs. 10,000 as donation to the Trust P, how much is the approximate contribution of 'Y' to the Trust P ?

A Rs. 17,000

B Rs. 18,000

C Rs. 19,000

D Rs. 20,000

Answer: B

Explanation:

Z's funds = $10000 \times 100/5 = 2$ lakhs

Y has funds which are 2 times the funds of Z => 4 lakhs

X has given loan to Y which is equal to 10% of funds of Y

Y's funds + 10% of Y's funds = 4 lakhs

Y's funds = $4/1.1$ lakhs

Y's donation = $5/100 (4/1.1 \text{ lakhs}) = 18181.81$

96. A bucket contains 200cc of liquid. A solid ball is dropped in the bucket resulting in the rise of liquid level to 1.3 times of its original level. If the radius of the base of the bucket is 3 cm and the radius of the surface of the liquid level is 1 cm more than the radius of the base of the bucket before the ball is dropped. Find the volume of the solid metal ball.

- A 68cc
- B 80cc
- C 92cc
- D Can't be determined

Answer: B

Explanation:

Let height of liquid level before the ball was dropped be h

The radius of the surface of the liquid level then is 4cm

$$\frac{h}{3} \pi (4^2 + 3^2 + 4 \cdot 3) = 200cc$$
$$\Rightarrow h = \frac{600}{37\pi}$$

The liquid level raises by $0.3h$ as a result of the solid metal ball being dropped.

By similarity, the radius of the surface of the liquid level after metal ball is dropped is 4.3cm

$$\text{Volume of the solid metal ball} = \frac{1.3h}{3} \pi (4^2 + 3^2 + 4.3(3)) - 200 = 83.82cc$$

97. P.....Q
R.....S
T.....U
V.....W

Using 5 dots in each of the lines PQ, RS, TU and VW as the vertices, how many triangles can be drawn such that the base is on any one of the above lines?

- A 120
- B 150
- C 200
- D 600

Answer: D

Explanation:

The base on any one of the lines can be formed in ${}^5C_2 = 10$ ways

To form a triangle, the base has to be joined to any of the 15 points on the other lines

Number of triangles that can be drawn when the base is on any of the lines = $10 \times 15 = 150$

and number of triangles that can be drawn totally = $150 \times 4 = 600$

98. In the triangle PQR, S is the midpoint of QR. X is any point on PR. T is the point on QR such that $PT \parallel SX$. If the area of triangle PQR is 5.8 sq. cm. then the area of triangle RTX is

- A 2.9 sq. cm
- B 3.2 sq. cm
- C 5.8 sq. cm
- D 2.45 sq. cm

Answer: A

Explanation:

S is the midpoint of QR. So, area of PSR = $\frac{1}{2} (\text{Area of } PQR) = \frac{5.8}{2} = 2.9$

$PT \parallel XS$

So area of XSP = area of XST (same height and same base)

Adding area of XSR on both sides, we have area of PSR = Area of RTX

=> area of PSR = Area of RTX = 2.9 sq.cm

99. Given $P(x, y) = x^2 + xy + y^2$; $Q(x, y) = x^2 - xy + y^2$. Find the value of $P(7, Q(9, 4))$

- A 4169

B 4197

C 4089

D 4127

Answer: B

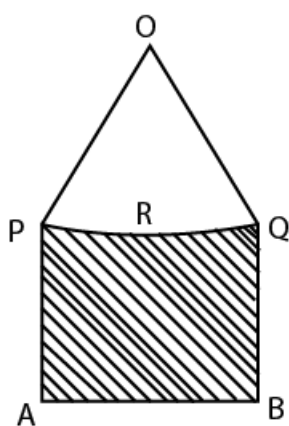
Explanation:

$$Q(x,y) = x^2 - xy + y^2.$$

$$Q(9,4) = 9^2 - 4 \cdot 9 + 4^2 = 81 + 16 - 36 = 61$$

$$P(7,61) = 7^2 + 7 \cdot 61 + 61^2 = 49 + 427 + 3721 = 4197$$

00. In the given figure, $PA=QB$ and PRQ is the arc of the circle, centre of which is O such that angle $POQ = 90^\circ$. If $AB = 25\sqrt{2}$ cm and the perpendicular distance of AB from centre O is 30 cm. Find the area of the shaded region?



A $625\sqrt{2}$ sq. cm

B $625\left(\frac{1}{2} + \frac{\pi}{4}\right)$ sq. cm

C $750\sqrt{2} - 625\left(\frac{1}{2} + \frac{\pi}{4}\right)$ sq. cm

D None

Answer: C

Explanation:

PA = QB and A=B = 90°

=> PQBA is a rectangle.

Area of the shaded region = (Area of PQBA - Area of the segment PRQ)

$$PQ = AB = 25\sqrt{5}$$

$$PO = QO = \frac{PQ}{\sqrt{2}} = 25 = \text{radius of the circle.}$$

The perpendicular from O to PQ is $\frac{25}{\sqrt{2}}$

Distance from the foot of the perpendicular to AB = $30 - \frac{25}{\sqrt{2}}$

$$\text{Area of PQBA} = \left(30 - \frac{25}{\sqrt{2}}\right) (25\sqrt{2}) = 750\sqrt{2} - 625$$

$$\text{Area of segment PRQ} = \text{Area of sector OPRQ} - \text{Area of triangle OPQ} = \frac{90}{360}\pi 25^2 - \frac{1}{2}25^2$$

$$\text{Area of shaded region} = (750\sqrt{2} - 625) - \left(\frac{90}{360}\pi 25^2 - \frac{1}{2}25^2\right)$$

= option C

01. The roots of quadratic equation $y^2 - 8y + 14$ are α and β . Find the value of $(1 + \alpha + \beta^2)(1 + \beta + \alpha^2)$

A 419

B 431

C $485 + 3\sqrt{22}$

D $453 + \sqrt{22}$

Answer: B

Explanation:

$$\alpha\beta = 14$$

$$\alpha + \beta = 8$$

$$(1 + \alpha + \beta^2)(1 + \beta + \alpha^2) = 1 + \beta + \alpha^2 + \alpha + \alpha\beta + \alpha^3 + \beta^2 + \beta^3 + (\alpha\beta)^2$$

$$\alpha^2 + \beta^2 = (\alpha + \beta)^2 - 2\alpha\beta = 64 - 28 = 36$$

$$\alpha^3 + \beta^3 = (\alpha + \beta)^3 - 3\alpha\beta(\alpha + \beta) = 512 - 336 = 176$$

$$\text{Hence } 1 + \beta + \alpha^2 + \alpha + \alpha\beta + \alpha^3 + \beta^2 + \beta^3 + (\alpha\beta)^2 = 1 + 8 + 36 + 176 + 14 + 196 = 431$$

02. $\frac{1}{\log_x yz+1} + \frac{1}{\log_y xz+1} + \frac{1}{\log_z xy+1} = ?$

A 0

B 1

C xyz

D $\frac{\log xyz}{\log xyz+1}$

Answer: B

Explanation:

The equation becomes

$$\Rightarrow \log_x yz + \log_x x + \log_y xz + \log_y y + \log_z xy + \log_z z$$

$$\log_x xyz + \log_y xyz + \log_z xyz$$

$$\log_{xyz} xyz$$

$$= 1.$$

03. Ram, Ravi and Ratan can alone finish an assignment in 9 days, 12 days and 15 days respectively. They decide to complete a work by working in turns. Ram works alone on Monday, Ravi does the work alone on Tuesday, followed by Ratan working alone on Wednesday & so on. What proportion of the complete work is done by Ravi?

- A** 2/9
B 12/47
C 1/3
D 4/9

Answer: C

Explanation:

Part of the work completed on Monday, Tuesday and Wednesday = $\frac{1}{9} + \frac{1}{12} + \frac{1}{15} = \frac{47}{180}$

Part of the work completed at the end of 9 days of work = $\frac{47(3)}{180} = \frac{47}{60}$

remaining part of the work = $\frac{13}{60} = \frac{39}{180}$

Part of the work completed by ram on 10th day = $\frac{1}{9} = \frac{20}{180}$

Part of the work completed by Rvi on 11th day = $\frac{1}{12} = \frac{15}{180}$

remaining part of the work = $\frac{4}{180}$

Ratan can do $\frac{12}{180}$ th of work on 12th day. Hence he needs $\frac{1}{3}$ rd of the 12th day.

Proportion of the completed work done by Ravi = $3(\frac{1}{12}) + \frac{15}{180} = \frac{1}{3}$

04. Let S_1 be a square of side 4 cm. Circle C_1 circumscribes the square S_1 such that all its corners are on C_1 . Another square S_2 circumscribes the circle C_1 . Circle C_2 circumscribes the square S_2 , and square S_3 circumscribes circle C_2 , & so on. If A_N is the area between the square S_N and the circle C_N , where N is the natural number. then the ratio of sum of all A_N to A_1 is

A 1

B $\frac{\pi}{2} - 1$

C Can't be determined

D None of the above

Answer: D

Explanation:

Let the side of the square x be denoted by S_x

Let the radius of the circle y be denoted by r_y and diameter by d_y

$$S_{s1} = 4$$

$$r_{c1} = \frac{d_{c1}}{2} = \frac{4\sqrt{2}}{2} = 2\sqrt{2}$$

$$S_{s2} = d_{c1} = 4\sqrt{2}$$

$$r_{c2} = 4$$

..

.

.

$$A1 = \pi r_{c1}^2 - S_{s1}^2 = 8\pi - 16$$

$$A2 = 16\pi - 32$$

$$A3 = 32\pi - 64$$

$$\text{Sum} = \frac{(8\pi - 16)(2^n - 1)}{2 - 1} = (8\pi - 16)(2^n - 1)$$

$$\text{Ratio} = (2^n - 1)$$

Since the value of n is unknown, the answer can be C or D

05. **Joseph diametrically crosses a semi-circular playground and takes 48 seconds less than if he crosses the playground along the semi-circular path. If he walks 50 metres in one minute, the diameter of playground is**

A 54 metres

B 70 metres

C 85 metres

D 35 metres

Answer: B

Explanation:

$$\text{Speed of Joseph} = 50/60 = \frac{5}{6} \text{ m/s}$$

Let the radius of circular playground be r

Speed = distance/ time

$$\text{Time to diametrically cross a semi-circular playground } t1 = \frac{2r}{\frac{5}{6}} = \frac{12r}{5}$$

$$\text{Time to cross the playground along the semi-circular path } t2 = \frac{\pi r}{\frac{5}{6}} = \frac{(6\pi r)}{5}$$

$$t1 - t2 = 48$$

$$\frac{12r}{5} - \frac{(6\pi r)}{5} = 48$$

$$\Rightarrow r = 35\text{m}$$

hence diameter = 70m

06. Garima had only Rs. 200. Rs. 500 and Rs. 2000 notes in her wallet. She goes to Shoppers Stop. purchases some dresses and gives half of her Rs. 2000 notes & in turn receives same number of Rs. 200 notes. She then goes to a restaurant and gives all her Rs. 500 notes and receives thirty Rs. 2000 notes, which increases the number of Rs. 2000 notes she had by. 75%.- If now she has fifty Rs. 200 notes. what were the original number of Rs. 2000 and Rs. 200 notes she had at the start?

A 60, 10

B 60, 15

C 80, 10

D 80, 15

Answer: C

Explanation:

Garima had x notes of Rs 2000. She gave $x/2$ notes of Rs 2000. She is left with $x - x/2 = x/2$ notes

$$x/2 + 30 = 1.75x/2$$

$$\Rightarrow x = 80$$

So, she remains $80/2 = 40$ Rs 200 notes

So she must be having $50 - 40 = 10$ Rs 200 notes.

07. A metallic solid is made up of a solid cylindrical base with a solid cone on its top. The radius of the base of the cone is 5 cm. and the ratio of the height of the cylinder and the cone is 3:2. A cylindrical hole is drilled through the solid with height equal to $2/3^{rd}$ of the height of solid. What should be the radius (in cm) of the hole so that the volume of the hole is $1/3^{rd}$ of the volume of the metallic solid after drilling?

A $\sqrt{\frac{45}{8}}$

B $\sqrt{\frac{35}{8}}$

C $\sqrt{\frac{65}{8}}$

D $\sqrt{\frac{55}{8}}$

Answer: D

Explanation:

H - volume of hole

R - volume of remaining solid

T - Total volume

It is given, $H = \frac{1}{3}R$

$H + R = T$

$$T = 4H$$

$$\frac{1}{3}\pi (25)(2x) + \pi (25)(3x) = 4 \times \pi r^2 \left(\frac{10}{3}x\right)$$

$$r^2 = \frac{275}{40}$$

$$r = \sqrt{\frac{55}{8}}$$

The answer is option D.

08. Nitin installed an overhead tank on the roof of his newly constructed house. Three taps are connected to the tank: 2 taps A and B to fill the tank and one tap C to empty it. Tap A alone can fill the tank in 12 hours, while tap B alone takes one and a half times more time than tap A to fill the tank completely. Tap C alone can empty a completely filled tank in 36 hours. Yesterday, to fill the tank, Nitin first opened tap A, and then after 2 hours opened tap B also. However after 6 hours he realised that tap C was open from the very beginning. He quickly closes tap C. What will be the total time required to fill the tank?

- A** 8 hours 48 minutes
- B** 8 hours 30 minutes
- C** 9 hours 12 minutes
- D** 9 hours 36 minutes

Answer: C

Explanation:

Tap A alone can fill the tank in 12 hours

Tap B alone can fill the tank in $12 \times 1.5 = 18$ hours

Tap C alone can empty the tank in 36 hours

Let the total volume of the tank be 36 units

A fills 3 units, B fills 2 units and C empties 1 units in an hour.

Let the total time taken be 't'

$$t(3) + (t-2)2 - 6(1) = 36$$

$$5t = 46$$

$$t = 9.2 \text{ hrs} = 9 \text{ hours } 12 \text{ minutes}$$

The answer is option C.

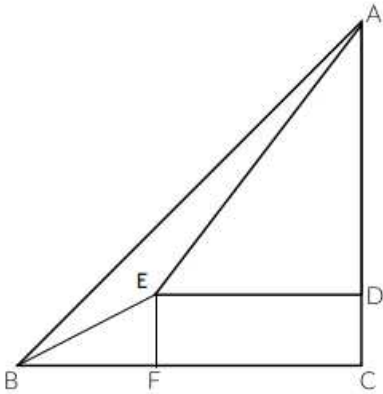
09. At the foot of the mountain, the angle of elevation of the summit at the top of the mountain is 45° . After ascending 100 metres, at a slope of 30° up the mountain towards the summit. the angle of elevation of the summit is 60° . Find the height of the summit.

- A** $50(\sqrt{3} + 1)$ metres
- B** $50(\sqrt{5} + 1)$ metres
- C** $50(\sqrt{3} + 2)$ metres

D $50\sqrt{3}$ metres

Answer: A

Explanation:



Let the point intersecting inside triangle ABC be 'E'.

It is given, $\angle AED = 60$, $\angle ABC = 45$, $\angle EBC = 30$ and $BE = 100$

At point E, $\angle BEF = 60$, $\angle DEF = 90$ and $\angle AED = 60$

$$\angle AEB = 360 - 60 - 60 - 90 = 150$$

In triangle AEB, $\angle EAB = 180 - 150 - 15 = 15$

$$\angle EAB = \angle EBA$$

Therefore, $EA = 100$ (as $BE = 100$)

$$EF = DC = 50$$

In triangle AED,

$$ED^2 + AD^2 = AE^2$$

$$ED = x, AD = \sqrt{3}x$$

$$4x^2 = (100)^2$$

$$2x = 100$$

$$x = 50$$

$$\text{Height of summit} = \sqrt{3}x + 50 = 50(\sqrt{3} + 1)$$

The answer is option A.

10. **Land Cruiser Prado**, the latest SUV from Toyota Motors, consumes diesel at the rate of $\frac{1}{400} \left\{ \frac{1000}{x} + x \right\}$ litres per Km. when travelling at the speed of x km/hr. The diesel costs Rs. 65 per litre and the driver is paid Rs. 50 per hour. Find the steady speed that will minimize the total cost of a 1000 km trip?

A 33 km/hr

B 36 km/hr

C 39 km/hr

D 52 km/hr

Answer: B

Explanation:

Total cost = Fuel cost + Driver's cost

Fuel cost = Total distance \times Cost of Diesel per km

Fuel cost = $1000 \times [1/400 \{ (1000/x) + x \}] \times 65$

Fuel cost = $162500/x + 162.5x$

Now, substituting the values from the given choices, we find that at $x=36$, the total cost is minimum.

Hence. Option B is correct.

11. In a survey on the viewership of the TV channels, 73% of those surveyed viewed at least one of the three Channels: Star Plus, Sab TV, and Sony. 38% of those surveyed viewed Star Plus, 39% viewed Sony, and 23% viewed Sab TV. 11% of all those surveyed viewed all the three channels. What percentage of those surveyed, viewed more than one of the three TV channels?

A 16

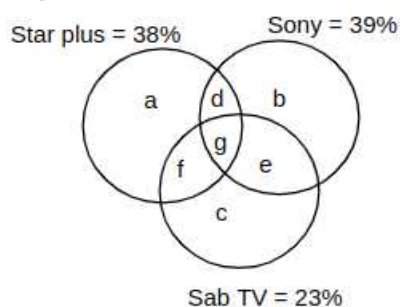
B 38

C 27

D Data Inadequate

Answer: A

Explanation:



It is given that 73% of those surveyed viewed at least one of the three Channels; this implies 27% viewed none of the channels

$$a + b + c + d + e + f + g = 73$$

It is given, $g = 11$

$$a + b + c + d + e + f = 62 \dots\dots\dots (1)$$

$$a + b + c + 2(d + e + f) + 3g = 38 + 39 + 23$$

$$a + b + c + 2(d + e + f) + 3g = 100$$

$$a + b + c + 2(d + e + f) = 67 \dots\dots\dots (2)$$

Subtracting (1) from (2), we get

$$d + e + f = 67 - 62 = 5$$

The percentage of those surveyed, viewed more than one of the three TV channels = $d + e + f + g = 5 + 11 = 16$

The answer is option A.

12. A physical therapist of Russian football team knows that the team will play 40% of its matches on artificial turf, this season. Because of his vast experience, he knows that a football player's chances of incurring a knee injury is 50% higher if he is playing on artificial turf instead of grass. If the player's chances of a knee injury on artificial turf is 0.42, what is the probability that a football player with knee injury, incurred the injury while playing on grass?

- A** 0.28
B 0.336
C 0.5
D None of the above

Answer: C

Explanation:

Probability of playing on grass = 0.6

Probability of playing on Artificial turf = 0.4

Probability of injury on artificial turf = $\frac{3}{2}$ (probability of injury on grass)

$0.42 = \frac{3}{2}$ (probability of injury on grass)

Probability of injury on grass = 0.28

Applying Baye's theorem,

Probability of injury on grass = $\frac{0.6 \times 0.28}{0.6 \times 0.28 + 0.4 \times 0.42} \approx 0.5$

The answer is option C.

13. The square root of $1 + x^2 + \sqrt{1 + x^2 + x^4}$ is

- A** $\frac{1}{\sqrt{2}} [\sqrt{1 + x + x^2} + \sqrt{1 - x + x^2}]$
B $\frac{1}{\sqrt{2}} [\sqrt{1 + x + x^2} - \sqrt{1 - x + x^2}]$
C $\frac{1}{\sqrt{2}} [\sqrt{1 + x^2 + x^4 + x^8}]$
D None of the above

Answer: A

Explanation:

$$1 + x^2 + \sqrt{1 + x^2 + x^4}$$

$$= \frac{1}{2} (2 + 2x^2 + 2\sqrt{1 + x^2 + x^4})$$

$$= \frac{1}{2} (1 + x + x^2 + 1 - x + x^2 + 2\sqrt{(1 + x + x^2)(1 - x + x^2)})$$

$$= \frac{1}{2} (\sqrt{1 + x + x^2} + \sqrt{1 - x + x^2})^2$$

$$\sqrt{1 + x^2 + \sqrt{1 + x^2 + x^4}} = \sqrt{\frac{1}{2} (\sqrt{1 + x + x^2} + \sqrt{1 - x + x^2})^2}$$

$$\sqrt{1+x^2} + \sqrt{1+x^2+x^4} = \frac{1}{\sqrt{2}} (\sqrt{1+x+x^2} + \sqrt{1-x+x^2})$$

The answer is option A.

14. $\log_2 x \cdot \log_2^x 2 = \log_2^x 2$; then $x = ?$

A 2

B 4

C 12

D 16

Answer: B

Explanation:

$$\log_b a = \frac{1}{\log_a b}$$

$$\log_2 x \cdot \log_2^x 2 = \frac{\log_2 x}{\log_2 \left(\frac{x}{2} \right)} = \log_2 x - 1$$

Similarly,

$$\log_2^x 2 = \frac{1}{\log_2 x - 1}$$

$$\text{Let } \log_2 x = t \Rightarrow \frac{t}{t-1} = \frac{1}{t-1} \Rightarrow t^2 - 5t + 6 = 0 \Rightarrow (t-2)(t-3) = 0 \Rightarrow t=2,3$$

$$\therefore \log_2 x = 2 \text{ or } 3 \Rightarrow x = 4 \text{ or } 8.$$

Hence, B is correct.