

IPMAT ROHTAK 2020
ANSWER KEY AND EXPLANATIONS

1. (c) $P + 2I = 800$ (i)
 $P + 3I = 920$ (ii)
 From (i) & (ii)
 $I = 120$
 From (i) $P = 560$
2. (a)

11%		14%
1529		1946
1754		
192	:	225
64	:	75
= 139		
100 X		X 100
6400		7500
		13900

Ans = 6400
3. (b) No Explanation
4. (c) No Explanation
5. (d)

B_1	B_2	B_3	
20%	15%	32%	= 67%
Diff 0.6%	1.05%	0.64%	= 2.29%
(3% of 20)	(7% of 15)	(2% of 32)	<u>64.71%</u>

So our answer is 64%
6. (?) Data insufficient
7. (a) First meeting at any point $= \frac{L}{a-b} = \frac{115}{5-4} = 115$ hr.
 L = length of track
 a = speed of Fast runner
 b = speed of slow runner
8. (b)

	Box	Box	Box	No of ways
Case - I	1	2	2	15
Case - II	3	1	1	
Case I	Box	Box	Box	
	R_1	R_2, R_3	R_4, R_5	
	R_1	R_2, R_4	R_3, R_5	$\rightarrow 3$
	R_1	R_2, R_5	R_3, R_4	
R_2				
R_2	$\rightarrow 3$			
R_2				
\vdots				
\vdots				
R_5				
R_5	$\rightarrow 3$			
R_5				

Total = 15 case
 Case - II ${}^5C_3 \times 1 \times 1 = 10$ ways
 \therefore total no of ways = $15 + 10 = 25$
9. (d) Single colour $\rightarrow 6$
 2 different colour $\rightarrow 6 \times 5 = 30$
 3 different colour $\rightarrow 6 \times 5 \times 4 = 120$
 4 different colour $\rightarrow 6 \times 5 \times 4 \times 3 = 360$
 5 different colour $\rightarrow 6 \times 5 \times 4 \times 3 \times 2 = 720$
 6 different colour $\rightarrow 6! = 720$
1956
10. (d) Beefless $= 0, 1, 2 \dots \dots 12 \rightarrow 13$
 Pink Floyd $= 0, 1, 2 \dots \dots 7 \rightarrow 8$
 MJ $= 2 \times 2 \times 2 \rightarrow 8$
 Modona $= 2 \times 2 \rightarrow 4$
 Total no of ways $= 13 \times 8 \times 8 \times 4 = 1$
3327

11. (a) ${}^{20}C_{16} {}^{20}C_4 = \frac{20 \times 19 \times 18 \times 17}{4 \times 3 \times 2 \times 1}$
 $= 4845$
12. (c) Atleast 1 black shirt = total - no black shirt
 $= {}^9C_3 - {}^6C_3$
 $= 84 - 20$
 $= 64$
13. (c) $(n-1)! = (7-1)! = 6! = 720$
14. (a) Let x be the average spending per need
 $495(x-1) - 459x = 81$
 $x = 16$
 Required = $459x$
 $= 459 \times 16$
 $= 7344$
15. (a) At present average age of 9 friends = 22 years
 6 year ago, average of 9 friends = 16 years
 Total sum of ages of 9 friends age of = 9×16
 Total sum of 8 friends + age of LAVGIR = 9×16
 Total sum of ages of 8 friends + 0 = 9×16
 Total sum of ages of 8 friends = 9×16
 Average age of 8 friends = $\frac{9 \times 16}{8} = 18$ Years
16. (b) Average height of 19 person = height of 10th person = 19 feet

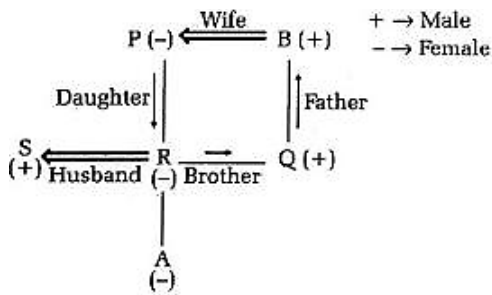
Shortest		10 th		Tallest
1		19		37
+18			+18	

Height of the shortest person = 1 feet
17. (a) No Explanation
18. (c) $M + T + W = 32 \times 3 = 96$ (i)
 $W + Thu + F + S = 30 \times 4 = 120$
(ii)
 $M + T + W + Thu + F + S = 26 \times 6 = 156$
(iii)
 (i) + (ii) - (iii)
 $W = 96 + 120 - 156 = 60$
19. (c) $M + T + W + Th + F + S = 4200 \times 6$
 $T + W + Th + F + Sat = 4200 \times 6 - 1200 = 24000$
 $Tue + Wed + Thu + Fri + Sat + Sun = 24000 + 1500 = 25500$
 Average $= \frac{25500}{6} = 4250$
20. (c) ${}^8C_3 = \frac{8!}{3! 5!} = 56$
21. (a)

Red	Blue	White	Violet	Pink	Brown	Yellow	Black
N	P	M	R	S	O	T	Q
22. (b)

Red	Blue	White	Violet	Pink	Brown	Yellow	Black
N	P	M	R	S	O	T	Q

23. (d)



24. (a) Odd numbered dice are : (II), (III) and (V). No. of dots on the top faces of these dice are 2, 2 and 4 respectively. Required total = $2 + 2 + 4 = 8$.

25. (c) Looking into the method of coding it is clear that, 2 is coded as N, 3 as P, 5 as T, 4 as S and 9 as L. So, 23549 is coded as NPTSL.

26. (d) Saurabh walks south 80m then he turned right (means in West) and walks 80m then turn left (means in South) and walks 60m then turn left (means in East) and walks 80m. So from initial position Saurabh is exactly in South direction and at $80\text{m} + 60 = 140\text{m}$ away.

27. (b) Statement II is the only true statement. Since all cats like to run, then the ones who like to swim also like to run. There is no support for statement I or statement III.

28. (b) Nurse Kemp has worked more shifts in a row than Nurse Calvin; therefore, Kemp has worked more than eight shifts. The number of Kemp's shifts plus the number of Rogers's shifts (five) cannot equal fifteen or more, the number of Miller's shifts. Therefore, Kemp has worked nine shifts in a row ($5 + 9 = 14$).

29. (c) According to the given information, we get:
 $T > R > Q > P$

Hence, R scored second highest marks

30. (d) The numbers are in terms of $7 \times 8, 8 \times 9, 9 \times 10, 10 \times 11, 11 \times 12, 12 \times 13$.
So, 139 is wrong, it should be 156.

31. (c) Kavikant is to left of Anurag and to the right of Bipin \Rightarrow Bipin, Kavikant, Anurag
Jayant is the right to Gaurav and left to Bipin \Rightarrow Gaurav, Jayant, Bipin
Komal is to the right of Anurag and left of Ramu \Rightarrow Anurag, Komal, Ramu
Thus the order is Gaurav, Jayant, Bipin, Kavikant, Anurag, Komal, Ramu.
Hence Kavikant is in the middle.

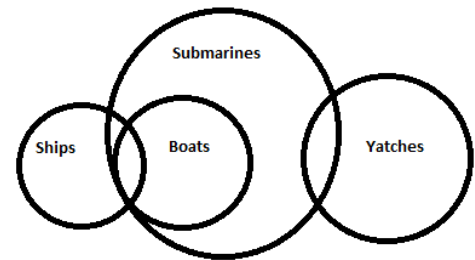
32. (c) So $78 - 25 = 53$ person are there after Karan in the row but Salman Khan was standing at 20th position from the right, so out of 53 person we will subtract 20 to get persons between Karan and Salman i.e. $53 - 20 = 33$.

33. (c) $12 \times 3 + 2 = 38$
 $38 \times 3 + 2 = 116$
 $116 \times 3 + 2 = 350$
 $350 \times 3 + 2 = 1052$
 $1052 \times 3 + 2 = 3158$

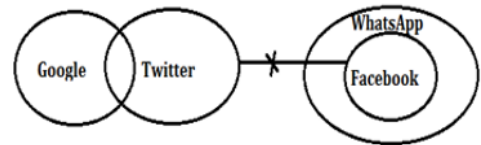
34. (d) From option (d): $M \times N - C + F, M \times N \rightarrow M$ is the father of N. $N - C \rightarrow N$ is the sister of C and $C + F \rightarrow C$ is the brother of F.
Hence, M is the father of C or C is the son of M.

35. (b) Theft is confessed and fault is admitted.

36. (a) I. Possibility
II. True
III. True
IV. Possibility

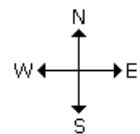


37. (d) I. True
II. True



38. (c)

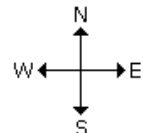
- \rightarrow Fiat
- \rightarrow Bedford
- \rightarrow Maruti
- \rightarrow Ambassador
- \rightarrow Fargo
- \rightarrow Cadillac
- \rightarrow Mercedes



Fargo and Mercedes are on both the sides of Cadillac car.

39. (a) Therefore, Maruti is next left of Ambassador.

- \rightarrow Fiat
- \rightarrow Bedford
- \rightarrow Maruti
- \rightarrow Ambassador
- \rightarrow Fargo
- \rightarrow Cadillac
- \rightarrow Mercedes



40. (b) Using the correct symbols, we have
Given expression = $(10 \times 4) + (4 \times 4) - 6$
 $= 40 + 16 - 6$
 $= 56 - 6 = 50$.

41. (b) Sedative acts as an aid to sleep. Similarly a mnemonic acts as an aid to memory.

42. (a) First is a more intense form of the second. Here Jeopardy is the more intense form of Peril and Jealousy is the more intense form of Envy.

43. (d) Agog means full of intense interest or excitement; eager. It has been used correctly in the given sentences.

44. (d) Tantamount- equivalent in seriousness to; as good as.

45. (c) Some of the important themes are to ensure that students have ready access to the right learning

- material especially in their own languages because it ensures a better understanding of subjects.
46. (c) The unemployment rate has dropped sharply this quarter though it may only be temporary.
47. (c) Doordarshan's promotions must go beyond mere reportage of facts, and capture the story between the lines but with over 1 billion people talking in several languages and a variety of lifestyles to boot, it is obvious one cannot address all of them together all the time.
48. (b) Secularism today has come to mean as preservation of religious minorities in their traditional modes because it is ironic, not tragic, that minorities in our country have come to be identified with religion and not with community or profession.
49. (d) The milkman in my neighborhood likes to talk to his customers while he provides them milk every morning.
50. (c) Naveen is so lazy that he can seldom complete his work on time.
51. (a) You are thinking very highly about Prashant but he is not so means you have a good opinion about Prashant but he is not as good as you think.
52. (a) The war of "the" Mahabharata
53. (b) Drop "a" little sugar
54. (d) is the correct answer.
55. (c) Shiftless means lazy
56. (a) Refer to the second line of the paragraph where it is clearly stated that Gandhi believed that Indian villagers should be self sufficient and avoid commercialized material culture.
57. (b) Refer to the second line of the passage which states that villagers should be self sufficient in food and avoid the commercialized material culture. Therefore, the idyllic and rural paradise is the self-sufficiency in food clothes and simplicity of the lifestyle.
58. (c) Audacious-showing a willingness to take surprisingly bold risks
Bodacious - Excellent, admirable, or attractive
Risk-taker - a person who takes risks
59. (b) Fumigate - disinfect or purify (an area) with the fumes of certain chemicals
Spray - liquid that is blown or driven through the air in the form of tiny drops
Decontaminate - neutralize or remove dangerous substances
60. (c) Hypochondria -People with illness anxiety disorder.

Notes:

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