

## CODING & DECODING

1. In a certain code language, if the word NESTLE is coded as ODUROB, then how is the word OPPOSITE coded in that language?

(1) PQRMVEX

NESTLE  
+1 -1 +2 -2 +3 -3  
ODUROB

✓(2) PORMVFXA

OPPOSITE  
+1 -1 +2 -2 +3 -3 +4 -4  
PORMVFXA

(3) POSNVGYA

(4)

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In a certain language, if the word CRANE is coded as EVGVO, then how is the word REVIEW coded in that language?

CRANE      REVIEW  
 $+2+4+6+8+10$        $+2+4+6+8+10+12$   
(1) IJCRPJ    (2) TKAONI    (3) THBRPI    ✓  
TIBQOI        EVGVO        TIBQOI

3. In a certain code language, if the word INFANT is coded as HLCWIN, then how is the word MONSOON coded in that language?

INFANT = HLCWIN      MONSOON  
 $-1-2-3-4-5-6$        $-1-2-3-4-5-6-7$   
(1) NQPULJI    (2) LNMNIJG    (3) LMKOJIG    (4) LMOKIJG

4. In a certain code language, if the word PANTHER is coded as RYQQMZY, then how is the word QUALITY coded in that language?

QUALITY = SSDINOF      RYQQMZY  
 $+2-2+3-3+5-9+7$        $+2-2+3-3+5-5+7$   
✓ (1) SSDINOF    (2) STDIMOE    (3) RRCINPF    (4) RSDIMPF

5. In a certain code language, if the word HANDLE is coded as ADEHNL and HAMPER is coded as APRHME, then how is the word REGION coded in that language?

HANDLE      ADEHNL  
REGION      EANRCO  
(1) RINGEO    (2) GRINEO    (3) EINRGO    (4) EORING

6. In a certain code language, if the word COUSIN is coded as CINOSU and LINEAR is coded as AEILNR, then how is the word REGION coded in that language?

COUSIN      LINEAR  
CINOSU      AEILNR  
(1) RINGEO    ✓ (2) EGINOR    (3) GRINEO    (4) EINRGO    ✓  
REGION      RONEIG

7. In a certain code language, if the word STACTOMETER is coded as RETEMOTCATS, then how is the word FUNDAMENTAL coded in that language?

(1) LATENMADNUF    (2) LATNEAMDNUF    (3) LATNEMDANUF    ✓ (4) LATNEMADNUF

8. In a certain code language, if the word HONEST is coded as OHENTS, then how is the word MARRIAGE coded in that language?

✓ (1) AMRRAIEG    (2) AAEGIMRR    (3) AAMRRIEG    (4) AMIRRAEG

9. In a certain code language, if the word INTEREST is coded as RESTINTE, then how is the word MERCHANT coded in that language?

✓ (1) HANTMERC    (2) HANMERC    (3) HAMTNERC    (4) HANEMTRC

10. In a certain code language, if the word DIAMETER is coded as MAIDRETE, then how is the word EQUATION coded in that language?

(1) AUEQNOIT    ✓ (2) AUQENOIT    (3) AUQNEOIT    (4) AUQIONET

11. In a certain code language, if the word POWDER is coded as KLDWVI, then how is the word NATION coded in that language?

(1) MYGQLM    (2) MZHQLM    ✓ (3) MZGRLM    (4) MXHPMN

12. In a certain code language, if the word MASTER is coded as ZNFGRE, then how is the word MINUTE coded in that language?

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ECE-B (1) NRMFGV (2) ZRBHGR (3) NRMFGV (4) ZVAHGR

13. In a certain code language, if QUAIL is coded as 73280, QUEEN is coded as 61021 and ACE is coded as 471 then which among the following could be the code for CANCEL?

QUAIL 73280 ACE 471 (1) 476410 (2) 476418 (3) 476413 (4) Either (2) or (3) CANCEL  
QUEEN 61021

14. In a certain code language, if 'Sun is bright' is coded as 256, 'Rose is Red' is coded as 785, and 'Red is bright' is coded as 257, then how is "bright Sun is Rose Red" coded in that language?

(1) 26517 (2) 26583 (3) 26587 (4) 24587

15. In a certain code language, if DRIVE is coded as 68052, RED is coded as 826 and RADIO is coded as 84603, then what is the code for 'DIVIDE' in that language?

(1) 605062 (2) 606052 (3) 602056 (4) 600625

16. In a certain code, if word LANCER = 36 and MECHANIC = 64, then what is the value of NUMERIC in that code?

(1) 64 (2) 36 (3) 49 (4) 58

17. In a certain code, if the word FABRIC = 39, IMPEDE = 52 and IMPERIAL = 83, then what is the value of MILITARY?

(1) 83 (2) 79 (3) 85 (4) 107

18. In a certain code language, if the word FUNCTION is coded as FCECBIFE and LUNAR is coded as CCEAI, then how is the word SYNONYM coded in that language?

(1) IGEFEGD (2) JGMFMGE (3) JHDEDGF (4) JIHFHGD

19. In a certain code, if DISCIPLE = 77 and FAMOUS = 57, then what is the value of MATURE?

(1) 78 (2) 20 (3) 24 (4) 87 13 12 21 17 5 38

20. In a certain code language, if the word GLOBE is coded as FCPMH and OPAQUE is coded as FVRBQP, then how is the word PURSUIT coded in that language?

(1) UJVTSVQ (2) QVSTVIU (3) TIYWSUP (4) TGVSTWR GLOBE  
FC PMH

Directions for questions 21 to 25: For the following sentences given in column 1, the codes are given in column II. Answer the following questions by finding the codes for the words from the given columns.

Column I	Column II
All people are not poet	Kakcac hah fat zaz
Great people are happy	tat dad tafzaz
Krishna is a God	nan gag rar mam

Tagore is a great poet	mam kak dad nan lal
God make people happy	tat gag fafsas
No person is happy	xax pap faf man

God = gap

a = nan

is = mam

people = tat

happy = fafsas

21. What is the code for the word 'Tagore' in that language?

- a) Kak      b) dad      c) ~~lal~~      d) nan

22. What is the code for the word 'not' in that language?

- a) Cac      b) hah      c) tat      d) cannot be determined

23. What is the code for "No god is a person" in that language?

- a) Mam gag nan cac      b) pap gag nan mam tat c) lal mam gag cac tat d) xax  
mam gag nan pap

24. Which of the following can be the code for "tagore make great paintings" in that language?

- a) Dad saslalcac      b) lalkakkazwaw      c) qaq yay faf tat sas  
None      d)

25. If the code for "mahima is not a person" is " nan xax mam yay cac", then what is the code for "mahima make all people happy"?

- a) Xax yay cac tat sas b) faf yay sascac tat c) yay sashah tat faf d) Tat xax  
yay tat sas

**Directions for questions 26 to 30:** For the following sentences given in column I, the codes are given in column II. Answer the following questions by finding the codes for the words from the given columns.

Column I	Column II
I do not cheat.	1 # 2 7
I win the gold medal	9 @ 7 6 ¥
I am not the last	3 7 6 π #
Manav do not loose	1 8 # %

I = 7

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Last person win the silver  
medal

4 π 6 Θ @ ¥

Manav is a person

4 5 8 \*

211, 180, 151, 128,  
111  
9, 129, 462, 795, 11

I = 7 Cast = T cheat = 2  
The = 6 am = 3 gold = 9  
not = # manav = 8 person = 4  
do = 1 loose = %. Silver = Θ

26. What is the code for 'cheat'?

- a) 7 b) 1 c) # d) 2

27. What is the code of 'gold'?

- a) 9 b) @ c) 7 d) ¥

28. Which word is coded as Θ

- a) Person b) win c) silver d) medal

29. What is the code for "manav is a cheat"? & 5 π 2

- a) \*8 # 5 b) 4 8 5 2 c) 5 \* 8 2 d) 5 9 4 2

30. What can be the code for "I lose the gold medal"? Τ %. 6 9 @ (or) ¥

- a) 7 % 6 9 @ b) 7 % 6 9 ¥ c) Both a and b d) ¥ 6 9 7 @

### NUMBER SERIES

Directions for questions 1 to 50 : complete the following series.

1. 536, 458, 382, 308, 236, \_\_\_\_\_  
 53 45 38 30 23  
 a) 174 b) 166

236  
 - 70  
 166  
 c) 158 d) 146

2. 43, 86, 131, 178, 227, 278, \_\_\_\_\_  
 43 86 131 178 227 278  
 a) 343 b) 329

278  
 + 53  
 331  
 c) 337 d) 331

3. 38, 102, 168, 236, 306, \_\_\_\_\_  
 38 102 168 236 306  
 a) 381 b) 376

306  
 + 72  
 378  
 ✓ 378  
 d) 387

4. 438, 369, 302, 237, 174, \_\_\_\_\_  
 438 369 302 237 174  
 a) 119 b) 107

174  
 - 61  
 113  
 c) 115 d) 113

5. 56, 92, 141, 205, 286, \_\_\_\_\_  
 56 92 141 205 286  
 a) 386 b) 392

c) 374 d) 387

6. 769, 573, 404, 260, 139, \_\_\_\_\_  
 769 573 404 260 139  
 a) 39 b) 29

c) 43 d) 47

7. 63, 100, 141, 184, 231, \_\_\_\_\_ prime no.  
 difference  
 a) 280 b) 292 c) 284 d) 294

8, 211, 180, 151, 128, \_\_\_\_\_

~~a) 111~~

b) 109

c) 113

d) 107

9, 129, 462, 795, 1128, 1461, \_\_\_\_\_

→ difference = 333

~~a) 1794 b) 1756 c) 1804 d) 1816~~

10, 13, 26, 28, 56, 58, 116, 118, \_\_\_\_\_

~~a) 120~~

b) 226

c) 136

~~d) 236~~

11, 17, 51, 47, 141, 137, 411, \_\_\_\_\_

~~a) 1233 b) 414~~

~~e) 407~~

d) 417

18, 83, 85, 82, 87, 80, 91, 78, \_\_\_\_\_ 76

a) 93

b) 95

c) 99

~~d) 97~~

26, 14, 25, 47, 91, 179, \_\_\_\_\_

~~a) 355~~

b) 361

c) 352

d) 347

27, 12, 20, 47, 111, 236, 452

~~a) 448~~

~~b) 464~~

~~c) 452~~

d) 476

28, 3769, 2769, 2040, 1528, 1185, \_\_\_\_\_

a) 937

~~b) 969~~

c) 973

d) 981

19, 4, 5, 8, 27, 104, 525, \_\_\_\_\_

~~a) 3515 b) 3530 c) 3144 d) 3324~~

20, 110, 156, 210, 272, 342, 420

~~a) 392~~

~~b) 400~~

c) 436

~~d) 420~~

21, 2, 6, 20, 42, 110, 156, \_\_\_\_\_

a) 284

b) 268

c) 276

~~d) 272~~

22, 30, 46, 64, 84, 106, \_\_\_\_\_

~~a) 130~~

b) 134

c) 126

d) 138

23, 9, 17, 37, 75, 137, 229, \_\_\_\_\_

~~a) 357~~

~~b) 331~~

c) 323

d) 337

24, 130, 222, 350, 520, 738, \_\_\_\_\_

a) 990

~~b) 1010~~

c) 1100

d) 1040

25, 5, 12, 24, 36, 52, 68, \_\_\_\_\_

3769, 2769, 2040, 1528, 1185 QG  
 1000 729 512 313 ?21  
 271 217 169 ?127  
 54 48 ?42  
 6 ?6

a) 84

b) 82

c) 86

d) 78

26. 6, 35, 143, 323, 667, -----

a) 1147 b) 1023 c) 1087 d) 1209

27. 5, 7, 11, 15, 23, 27, 35, -----

a) 39

b) 41

c) 37

d) 43

29. 11, 31, 71, 91, 32, 92, 13, -----

a) 73

b) 37

c) 79

d) 17

30. 35, 43, 50, 55, 65, 76, -----

a) 83

b) 91

c) 89

d) 93

31. 4, 6, 10, 14, 22, 26, -----

a) 32

b) 36

c) 34

d) 38

32. 21, 23, 29, 47, 75, -----

a) 90

b) 100

c) 120

d) 110

33. 480, 240, 160, 120, 96, -----

a) 80

b) 76

c) 64

d) 60

34. 3, 8, 24, 48, 120, 168, -----

a) 290

b) 260

c) 288

d) 258

35. 34, 43, 77, 84, 93, 177, 186, 203, -----

a) 391

b) 389

c) 373

d) 401

36. 529, 144, 385, 441, 169, 272, 324, 225, -----

a) 99

b) 103

c) 97

d) 93

37. 1, 16, 81, 256, 625, -----

a) 1024 b) 1296 c) 1428 d) 1326

38. 13, 44, 88, 176, 847, 1595, -----

a) 2988 b) 7546 c) 4941 d) 5346

39. 17, 49, 145, 433, 1297, -----

a) 3893

b) 3879

c) 3889 d) 3891

40. 29, 121, 16, 49, 169, 256, -----

a) 144

b) 121

c) 169

d) 225

, 1, 13, 11, 31, 29, \_\_\_\_\_

- a) 51      b) 63      c) 61      d) 57

42. 80, 150, 252, 392, 576, \_\_\_\_\_

- a) 648      b) 738      c) 836      d) 810

43. 0, 18, 100, 294, 648, \_\_\_\_\_

- a) 1452 b) 1210 c) 1310 d) 1194

44. 3, 10, 29, 66, 127, 218, \_\_\_\_\_

- a) 341      b) 345      c) 339      d) 351

45. 72, 46, 521, 612, 343, \_\_\_\_\_

- a) 512      b) 729      c) 927      d) 215

46. 4/2197, 9/1331, 25/343, 49/125, 121/27, \_\_\_\_\_

- a) 169/9      b) 169/1      c) 169/8      d) 196/8

47. 10, 101, 1000, 1011, 1110, \_\_\_\_\_

- a) 100011      b) 11001      c) 10111      d) 10001

48. 101, 1010, 1111, 10100, 11001, \_\_\_\_\_

- a) 10110      b) 11110      c) 10111      d) 11010

49. 10, 100, 1000, 1110, 10110, 100000, \_\_\_\_\_

- a) 101100      b) 101110      c) 111010      d) 100110

50. 49, 50, 58, 85, 149, 274, \_\_\_\_\_

- a) 510      b) 470      c) 490      d) 485

51. 49, 64, 66, 51, 85, 40, 108, 33, 137, 28, 168, 25, \_\_\_\_\_

- a) 20, 205      b) 30, 210      c) 205, 23      d) 210, 30

52. 5, 13, 25, 41, 61, 85, \_\_\_\_\_

- a) 113      b) 107      c) 117      d) 123

53. 16, 8, 8, 12, 24, 60, 180, \_\_\_\_\_

- a) 610      b) 630      c) 720      d) 650

54. 14, 17, 50, 25, 29, 85, \_\_\_\_\_

- a) 91      b) 93      c) 89      d) 87

#### NUMBER & LETTER ANALOGY

**Directions for questions 1 to 50: Find the missing term.**

$$\begin{array}{ll} A(1) = 1 \times 1 = A & X(24) + 2 = 26(Z) \\ D(4) = 4 \times 3 = 12 = L & K(11) + 4 = 15(V) \end{array} \quad \begin{array}{ll} 11(K) \times 1 = 11(K) & 18(R) \times 5 = 90(L) \\ 23(W) + 2 = 25(Y) & 26(Z) + 6 = 32(F) \end{array}$$

1. AXDKYO : AZLOUU :: KWHBRZ : \_\_\_\_\_  
 $8(H) \times 3 = 24(X)$   
 $2(B) + 4 = 6(F)$

- a) KXXHLF b) XYXHDE c) KYXLF c) KYXHLE

2. JCTRE : OEUUI :: TYSEL : \_\_\_\_\_

- a) UAUIO b) UUUIO c) UAAIO d) UAUOO

3. MAP : KOYCNR :: YEN : \_\_\_\_\_

- a) WACGLP b) XACGLP c) WADFM O d) WACGMO

4. Nut : Shell :: Seed : \_\_\_\_\_

- a) Plant b) Tree c) Fruit d) Sapling

5. Day : Night :: Spendthrift : \_\_\_\_\_

- a) Rich b) Miser c) Poor d) Pauper

6. Hand : Fingers :: Leg : \_\_\_\_\_

- a) Knuckles b) Knee c) Toes d) Heel

7. Kangaroo : Hopping :: Snake : \_\_\_\_\_

- a) Crawling b) Mongoose c) Poisonous d) Bite

8. NATURE : PEVASI :: ISOMERS : \_\_\_\_\_

- a) OTUNJTV b) OTUNIST c) PUVNIST d) OVTNIST

9. BAD : BBL :: JDFA : \_\_\_\_\_ consider B(1) A(2) D(4)  $1 \times 1 = 1 \Rightarrow B$   
 $1 \times 2 = 2 \Rightarrow B$

- a) JHRI b) JHPX c) JFTV d) JHRT  $4 \times 3 = 12 \Rightarrow L$

10. FIELD : LRIXH :: CRICKET : \_\_\_\_\_  
 $3169311520$  |  $E=5 \Rightarrow 5+5=J$  |  $D=4 \Rightarrow 4+4=H$   
 $I=9 \Rightarrow 9+9=R$  |  $L=12 \Rightarrow 12+12=X$

- a) FHRDXLJ b) FIPDTLN c) FJRDHAL d) FJRFVIN

11. TAP : SUZBOQ :: RED : \_\_\_\_\_

- a) QTDGDE b) PSDEDFA c) QSDFCE d) QRDGEB

12. Train : Track :: Bus : \_\_\_\_\_

- a) Driver b) Road c) Petrol d) passengers

13. Earth : planet :: Carrot : \_\_\_\_\_

- a) Vegetable b) plant c) cooking d) Nut

14. Wood : Carpenter :: Iron : \_\_\_\_\_

15. Pen write "K" a) C  
16. 435 a) V

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- a) Goldsmith b) instrument c) melting d) blacksmith

15. Pen : write :: knife :

- a) Vegetable b) cut c) sharp d) shoot

16.  $435:534::678:$

- a) 876 b) 875 c) 676 d) 856

17.  $18:964::25216:$   $1^2 2^3 = 18, 3^2 4^3 = 964, 5^2 6^3 = 25216, 7^2 8^3 = 49152$

- a) 49512 b) 64729 c) 1001728 d) 16125

18.  $60:95::138::$

- a) 189 b) 192 c) 248 d) 315

19.  $12:1732::15::$

- a) 3080 b) 3380 c) 3764 d) 4550

20.  $441:8000::225::$

- a) 3996 b) 4194 c) 3096 d) 2744

21.  $19:399::21::$

- a) 324 b) 402 c) 473 d) 483

22.  $97:8::37::$   $97 = 10(3^1) + 7, 8 = 2^2(2), 37 = 10(3) + 7$

- a) 4 b) 5 c) 8 d) 10  $(2^1)(2) = 4$

23.  $350:20::42::$

- a) 737 b) 739 c) 1342 d) 1343

24.  $2:4::5::$   $\Rightarrow 2^2 = 4, 5^5 = 3125$

- a) 30 b) 355 c) 3125 d) 625

25.  $6:15::143::$

- $3^2 4^2 5^2 \rightarrow 12^2 - 1$   
a) 195 b) 323 c) 221 d) 287

26.  $3864:5098::4994::$

- a) 6228 b) 6246 c) 6194 d) 6286

27.  $68:82::97::$

- $1^3 8^2 4^2 6^2 \rightarrow 156$   
a) 130 b) 146 c) 113 d) 156

28.  $672:687::752::$

- a) 832 b) 766 c) 822 d) 850

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ECE-B 29. 112:448:: 241:

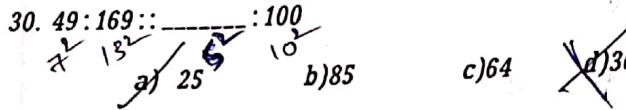
$$112 = 1+1+2 = 4$$

$$448 = 4+4+8 = 16 = 1+6 = 7$$

$$241 = 2+4+1 = 7$$

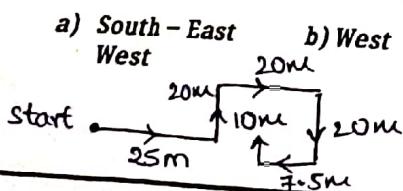
$$1+6+8+7 = 22 = 2+2 = 4$$

- a) 1500      b) 1687      c) 1568      d) 1600

30. 49:169:: :100  


### DIRECTIONS TEST

- Ramesh starts walking straight facing South. After walking 30 m he turned to his right, walked 25 m and turned to his left. Again after walking a distance of 10 m he turned to his left. Which direction is he facing now?  
a) West      b) East      c) North - East      d) South - West
- Town R is towards East of town H and is towards South of town K. Town K is towards which direction of town H?  
a) South - East      b) South - West      c) North - West      d) None of these
- Rajesh walked 5 m towards East, took a right turn and walked 10 m and again he took a right turn and walked 15 m. Towards which direction was he facing?  
a) South      b) West      c) North      d) South - West
- Manish walked 20 m towards West, took a right turn and walked 30m. Again he took a right turn and walked 20 m. Towards which direction was he facing?  
a) North      b) South      c) East      d) North - East.
- Pole H is to the East of pole R and to the North of pole D. pole D is in which direction with respect to pole R?  
a) North - East      b) South - West      c) North - West      d) South - East
- Prakash walked 30 m towards West, took a left turn and walked 20 m. he again took a left turn and walked 30 m. he then took a right turn and stopped. Towards which direction was he facing when he stopped?  
a) South      b) North      c) East      d) data  
inadequate
- If North - West becomes South, South - West becomes East and so on, then what will East become?  
a) North - West      b) North      c) South - West      d) North - East
- Q is to the North - East of P, R is to the West of Q and North - West of P and L is to the South of R in line with QP. In which direction of P is L located?  
a) South      b) South - West      c) West      d) North - West
- Ragini starts from her house towards East. After walking a distance of 25m, she turned towards left and walked 10 m. she then turned right and after moving a distance of 20 m, turned to her right again and walked 20 m. she then turns to the right and walks 7.5 m. Finally, she turns to her right. In which direction is she walking now?  
a) South - East      b) West      c) North      d) North - West



11. A girl walks each time  
a) North these  
again turns  
ram starts

Ram starts from his office facing Northward and walks 8 km, turns left and walks 6 km and again turns left and walk 8 km. In which direction is he from the starting point?

- a) North - West    b) East    c) South    d) None of these

11. A girl walks Northward then turns left, then right and then left after walking some distance each time. In which direction is she from the starting point?

- a) North - East    b) North - West    c) South - West    d) South - East

12. Asha walks 3 km. Southward and then turns right and walks 2 km. She again turns right and walks 3 km and turns towards her left and starts walking straight. In which direction is she walking now?

- a) North - West    b) South = East    c) South - West    d) West

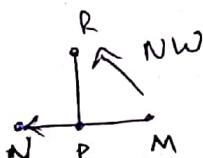
13. Ramesh walks 10 km Eastward, then turns right and walks 10 km. He then again turns right and walks 10 km. He takes a  $45^\circ$  turn leftwards and walks straight. In which direction is he walking now?

- a) North - West    b) South - East    c) South - West    d) North - East

14. (i) N is to the West of M.  
(ii) P is to the East of N.

- (iii) R is to the North of P,

What is R's position with respect of M?



- a) To the North - West  
b) To the North - East  
c) To the North  
d) Cannot be decided

15. Amit walked 20 m towards West, took a right turn and walked 30 m and again took a right turn and walked 20 m. How far was he from his starting point?

- a) 70 m    b) 40 m    c) 30 m    d) 50 m

16. Suresh walked 30 m towards North, took a left turn and walked 40 m. He again took a left turn and walked 30 m. How far is he from his starting point?

- a) 100 m    b) 60 m    c) 70 m    d) None of these

17. Virendra walks towards the East from point A, turns right at point B and walks the same distance as he walked towards the East. He now turns left, walks the same distance again and finally makes a left turn and stops at point C after walking the same distance. The distance between A and C is how many times as that of A and B?

- a) Cannot be determined    b) two    c) three    d) four

18. Aditi travels 10 km towards North. From there, she travels 4 km towards South. Then she travels 2.5 km towards East. How far is she from the starting point?

- a) 6.5 m    b) 8.5 m    c) 6 m    d) 12.5 m

19. David walks 40 m towards South. Then he turns left and walks 60 m. Now he turns left and walks 70 m. Now turning right, he walks 30 m. Finally he turns right and moves 30 m. In which direction and how far is he from his starting point?

- a) 90 km, West    b) 90 km, East    c) 90 km, South    d) 90 km, North

20. After walking 40 m to West, Sita walks 20 m to North. Then after walking 70 m to East, she walks 10 m South then again she walks 30 m to West. What is the shortest distance between the starting and the terminal points?

- a) 8 m    b) 9 m    c) 12 m    d) None of these

21. Shahid started moving towards West and walked 18 km straight. After taking a right turn he moved 12 km, then he took another right turn and walked 2 km straight. How far is he from the starting point?

- a) 20 m    b) 21 m    c) 22 m    d) 23 m

22. Rishi walked 10 km towards West, then he turned left and walked 16 km. He then turned

$$\begin{aligned} & \text{Start} \xrightarrow{\text{West}} 10 \text{ km} \xrightarrow{\text{North}} 2.5 \text{ km} \\ & \qquad\qquad\qquad \downarrow \\ & \qquad\qquad\qquad \text{Start} \xrightarrow{\text{South}} 6 \text{ km} \end{aligned}$$

$$\begin{aligned} & + 2.5^2 \\ & = 6.25 \text{ km} \end{aligned}$$



right and walked 10 km. he again turned right and walked 16 km. At what distance is he now from the starting point?

- a) 17 km      b) 18 km      c) 19 km

d) None of these

23. Tom and Dick start moving in opposite directions from a point. They both move 10.4 km. Dick moves to his left and covers 6 km. Tom moves left and covers 31.2 km. how far are they both from each other?

- a) 12 km      b) 13 km      c) 14 km

d) 15 km

24. A river flows West to East and on the way turns left and goes in a semicircle round a hillock, and then turns left in a right angles. In which direction is the river finally flowing?

- a) North      b) South      c) East

d) West

25. Starting from a point 'H'. Rita walked 36 m towards North. She turned to his right and walked 50 m. she then turned to his right and walked 36 m. she again turned to his right and walked 70 m and reached a point 'K'. how far Rita is from the point 'H' and in which direction?

- a) 20 m, East      b) 25 m, West      c) 25 m, East

d) 20 m, West

26. Jatin who is facing North turns to his right and walks 30 m. then he turns to his right and walks 14 m, then facing East he walks 30 m. how far is he from his original position?

- a) 60 m      b) 63 m      c) 55.61 m

d) None of these

27. Ashok starts from point P and walks 5 km to the East. Bharat starts from the same point and walks 5 km to the West. Now , Ashok takes a left turn, and Bharat takes a right turn, and both walk 5 km and stop. How far are the two from each other at the point where they finally stop?

- a) 10 km

- b) 15 km

- c) 5 km

- d) cannot be determined

28. Rohan walks a distance of 10 km towards North, then turns to his left and walks 20 km. he again turns left and walks 10 km and then, he takes a right turn and walks 5 km. how far he is from the starting point?

- a) 10 km

- b) 20 km

- c) 30 km

- d) 25 km

29. Uma and Rohan both started to walk 20 km from a place to South. Uma turned to her right and Rohan to his left Uma stopped for some time and then walked for 10 km in the direction in which she turned, on the other side Rohan walked only 6 km. then uma turned to her right and Rohan to his left. Now both walked 30 km ahead. How far is Uma from Rohan?

- a) 30 km

- b) 24 km

- c) 18 km

- d) None of these

30. A man facing towards west and turns through  $45^\circ$  clockwise, again  $180^\circ$  clockwise and then turns

through  $270^\circ$  anti clockwise. In which direction is he facing now?

- a) west

- b) North-west

- c) south

- d) South-west

### CLOCKS

$$6 \text{ strikes} \Rightarrow (6-1) = 5$$

$$\text{Total time to hear 6 strikes} = 2 \text{ sec} = 5 \times 2 = 10 \text{ sec}$$

- if a clock takes 22 sec to strike 12, how much time will it take to strike 6?  $12 \text{ strikes}, 11 \text{ intervals}$   
 a) 11       b) 10      c) 12      d) 9       $(12-1) \Rightarrow \text{each strike} = \frac{2}{11} = 2 \text{ sec}$
- If a clock takes 33 sec to strike 12, how much time will it take to strike 7?  $33 \text{ sec} \rightarrow 11 \text{ strikes}, 10 \text{ intervals}$   
 a) 15      b)  $33/2$        c) 18      d) 6       $\frac{33}{10} \times 7 = \frac{231}{10} = 23.1$
- A clock strikes ones at 1 o'clock, twice at 2 o'clock and so on. What is the total number of striking in a day?  $1, 2, 3, \dots, 12 \Rightarrow \frac{n(n+1)}{2} = \frac{12(12+1)}{2} = 78 = 156$   
 a) 12       b) 156      c) 78      d) 24
- How many times do the hands of a clock coincide in a day?  $12:00, 1:05, 2:11, 3:16, 4:22, 5:27, 6:33,$   
 a) 24       b) 22      c) 12      d) 11       $7:38, 8:44, 9:49, 10:55$
- How many times the hands of a clock be in a straight line but not together in a day?  $AM 11, PM 2 (1-2)$   
 a) 24      b) 22       c) 44      d) 48

How many times the hands of clock be in a straight line in a day?

a) 24

b) 22

c) 44

d) 48

7. How many times the hands of clock be at right angles in a day? In 12 hr, they are at rt. angles 22 times.

a) 24

b) 44

c) 48

d) 22

$\therefore$  In 24 hr  $\Rightarrow$  44 times.

8. At what angle the hands of a clock are inclined when the time is 20 min past 4? hr hand  $= \frac{13}{12}$  hrs.  $\frac{360}{12} \times \frac{13}{3} = 130^\circ$

a)  $120^\circ$ b)  $60^\circ$ c)  $20^\circ$ d)  $10^\circ$ 

9. At what angle the hands of a clock are inclined when the time is 30 min past 3? min  $= \frac{360}{60} \times 20 = 120^\circ$   $30(\frac{20}{5}) - 3(\frac{30}{2}) = 75^\circ$

a)  $60^\circ$ b)  $75^\circ$ c)  $80^\circ$ d)  $90^\circ$ 

10. At what time between 3 and 4 o' clock are the hands of a clock together.

a)  $16 \frac{4}{11}$  min. past 3c)  $17 \frac{3}{11}$  min. past 6  $(\frac{60}{55} \times 15)$  min  $= 16 \frac{4}{11}$ b)  $22 \frac{8}{11}$  min. past 3d)  $32 \frac{8}{11}$  min. past 5

11. At what time 6 and 7 o' clock are the hands of watch coincident.  $(\frac{60H}{11}) = \frac{60(6)}{11} = \frac{360}{11}$

a)  $28 \frac{2}{11}$  min. past 6c)  $31 \frac{9}{11}$  min. past 6 $= 32 \frac{8}{11}$ b)  $27 \frac{3}{11}$  min past 6d)  $32 \frac{8}{11}$  min past 6

12. At what time between 5 and 6 o' clock are the hands of a clock coincident.

a)  $28 \frac{2}{11}$  min. past 5c)  $26 \frac{4}{11}$  min. past 5 $(\frac{60H}{11})$  min past 14b)  $27 \frac{3}{11}$  min. past 5d)  $25 \frac{5}{11}$  min past 5 $\frac{60(5)}{11} = \frac{300}{11} = 27 \frac{3}{11}$ 

13. At what time between 9 and 10 o' clock will the hands of a watch be together.

a)  $48 \frac{2}{11}$  min. past 9c)  $49 \frac{1}{11}$  min. past 9 $\frac{60}{55} \times 45$  (or)  $49 \frac{1}{11}$  min. past 9b)  $47 \frac{3}{11}$  min past 9d)  $46 \frac{4}{11}$  min. past 9

14. At what time between 8 and 9 o' clock will the hands of a clock be the same straight line, but not together.

 $(5H - 30) \frac{12}{11}$  min past H  $\rightarrow H > 6 \Rightarrow H < 6 = (5H + 30) \frac{12}{11}$ a)  $10 \frac{10}{11}$  min. past 8c)  $12 \frac{8}{11}$  min. past 8  $(5H + 30) \frac{12}{11} = 10 \frac{10}{11}$  min past 8b)  $8 \frac{2}{11}$  min. past 8d)  $16 \frac{4}{11}$  min. past 8

15. At what time between 4 and 5 o' clock will the hands of a watch point in opposite direction?

a)  $54 \frac{6}{11}$  min. past 4c)  $51 \frac{9}{11}$  min. past 44'0 clock  $\Rightarrow$  20 min spaces  
5'0 clock  $\Rightarrow$  30 minb)  $55 \frac{5}{11}$  min. past 4d)  $57 \frac{3}{11}$  min. past 450 min spaces are gained in  $(\frac{60}{55} \times 50)$  min  $= 54 \frac{6}{11}$  min past 4

16. At what time between 1 and 2 o' clock will the hands of a clock point in opposite direction.

a)  $36 \frac{4}{11}$  min. past 1c)  $38 \frac{2}{11}$  min. past 1  $(5(1) + 30) \frac{12}{11} = \frac{35 \times 12}{11} = 420 \frac{4}{11}$ b)  $34 \frac{6}{11}$  min. past 1d)  $39 \frac{1}{11}$  min past 1

17. At what time between 10 and 11 o' clock will the hands of a clock be in the same straight line but not together.

 $(5(10) - 30) \frac{12}{11}$  min past 10  $= 20 \times \frac{12}{11} = 2 \frac{32}{11}$ a)  $22 \frac{8}{11}$  min. past 10c)  $23 \frac{7}{11}$  min past 5b)  $21 \frac{9}{11}$  min. past 10d)  $27 \frac{3}{11}$  min past 10

right angle b/w H & H+1 clock  $\Rightarrow (5H \pm 12) \frac{12}{11}$  min past H  
 18. At what time between 5 and 6 o'clock will the hands of a clock be at right angle.

$$(5 \times 5 \pm 15) \frac{12}{11} \text{ min past } 5$$

$$(25 \pm 15) \frac{12}{11} \text{ min past } 5$$

$$\frac{480}{11} = 43 \frac{7}{11} \text{ min past } 5$$

c)  $37 \frac{3}{11}$  min past 5

d)  $36 \frac{4}{11}$  min past 5

19. At what time between 2 and 3 o'clock will the two hands be at right angle to each other.

$$(5 \times 2 + 15) \frac{12}{11} \text{ min past } 2$$

$$\frac{25(12)}{300} \text{ min past } 2$$

c)  $24 \frac{6}{11}$  min past 2

$\checkmark$  d)  $27 \frac{3}{11}$  min past 2

20. At what time between 1.30 pm and 2 pm will both the hands of a clock be at right angle.

$$a) 53 \frac{7}{11} \text{ min past } 1$$

$$\checkmark b) 54 \frac{6}{11} \text{ min past } 1$$

c)  $56 \frac{4}{11}$  min past 1

d)  $57 \frac{3}{11}$  min past 1

21. At what time between 5.30 and 6 o'clock will the hands of a clock be at right angle.

$$5\text{o'clock} = 25\text{min}$$

$$\text{gain}(25+15) \text{ min past } 5$$

$$= 40\text{min past } 5$$

c)  $42 \frac{8}{11}$  min past 5

d)  $42 \frac{8}{11}$  min past 5

$$\text{spaces are } \frac{43}{60} \text{ min past } 5$$

$$\text{gained in } \frac{60}{60} \text{ min } = 43 \frac{7}{11} \text{ min}$$

22. At what time between 7 o'clock and 8 o'clock will the two hands of a clock be at right angle to each other.

$$(5(7) - 15) \frac{12}{11} \text{ min past } 7$$

$$\frac{(35-15)12}{11} \text{ min past } 7$$

$\checkmark$  c)  $21 \frac{9}{11}$  min past 7

d)  $22 \frac{8}{11}$  min past 7

23. The minute hand of a clock overtakes the hour hand at an interval of 65 minutes of a correct clock. How much does the clock gain (or) loss in a day? clock gain or loss in a day by

a) Gains  $10 \frac{10}{143}$  min

c) gains  $8 \frac{2}{143}$  min  $\left(\frac{720}{11} - M\right) \left(\frac{60 \times 24}{M}\right)$  min

b) Loses  $10 \frac{10}{143}$  min

d) loses  $8 \frac{2}{143}$  min  $\left(\frac{720}{11} - 65\right) \left(\frac{60 \times 24}{65}\right) = \frac{1440}{143}$

$$= 10 \frac{10}{143} \text{ min}$$

24. The minute hand of a clock overtakes the hour hand at an interval of 63 minutes of a correct clock. How much a day does the clock lose or gain?

a) Loses  $56 \frac{8}{77}$  min

c) loses  $54 \frac{6}{11}$  min

b) Gains  $54 \frac{6}{11}$  min

$\checkmark$  d) gains  $56 \frac{8}{77}$  min

Gain in 24hr =  $\left(\frac{24}{63} \times 60\right) \left(\frac{27}{11}\right)$

$$= 56 \frac{8}{77}$$

25. The minute hand over takes the hour hand at an interval of 66 min of a correct clock. How much does the clock lose (or) gain in a day?

a) Gains  $11 \frac{109}{121}$  min

c) gains  $109 \frac{11}{121}$  min

$$\left(\frac{720}{11} - 66\right) \left(\frac{60 \times 24}{66}\right)$$

$$\left(-\frac{8}{11}\right) \left(\frac{1440}{66}\right) = -\frac{1440}{121}$$

$$= 11 \frac{109}{121}$$

6. A watch which gains following Monday  
a) Tues

b) Loses  $11 \frac{109}{121}$  mind) loses  $109 \frac{11}{121}$  min

26. A watch which gains uniformly is 5 min slow at 6 a.m on a Monday and 10 minutes fast on the following Monday at 6 pm. When was the watch correct.  $\Rightarrow (5 + \frac{10}{60})$  times of  $(7 \times 24) + 12 = 180$  hrs

- a) Tuesday 2 pm  
b) Wednesday 2 pm  
c) Thursday 2 pm  
d) Wednesday 6 pm

27. A watch which gains uniformly, is 2 min slow at noon on Monday and is 4 min 48 sec fast at 2 pm on the following Monday. When was it correct. Time from 12pm on mon to 2pm  
 a) 2 pm on Tuesday  
b) 2 pm on Wednesday  
c) 2 pm on Thursday  
d) 2 pm on Friday
- watch gains  $(2 + \frac{48}{60}) = \frac{34}{5}$  min in 120 hr.  
 $2 \text{ min are gained in } (120 \times \frac{5}{34} \times 2) \approx 50$  hrs  
 2 days 2 hrs after 12 pm on mon i.e. 2pm wed.

28. The hands of a correct clock coincide after every. 2 days 2 hrs after 12 pm on mon i.e. 2pm wed.

- a) 60 min  
b) 61 min  
c)  $64 \frac{6}{11}$  min  
d)  $65 \frac{5}{11}$  min

### CALENDARS

- India got independence on 15 August 1947. What was the day of the week? Friday
- Mahatma Gandhi was born on 2 October 1869. What was the day of the week? Saturday
- The first Republic Day of India was celebrated on 26 January 1950. What was the day of the week on that date? Thursday
- Find the Number of times 29<sup>th</sup> day of the month occurs in 400 consecutive years. 4497
- 22 September 1999 was on Friday. What day of the week was on 22 September 2000? Sunday
- 7 January 1992 was Tuesday. Find the day of the week on the same date after 5 years i.e; on 7 January 1997. Thursday
- If 1996, November 6 was on Wednesday. What day of the week 2000, December 1? Saturday
- Which year will be having the same calendar as that of 2001? 2006
- Which year will be having the same calendar as that of 2010? 2021
- Which year will be having the same calendar as that of 2012? 2040
- If 15<sup>th</sup> June, 2007 is a Sunday, what day of the week will be 15<sup>th</sup> December in that year? Monday
- If 29<sup>th</sup> January 2013 is a Wednesday, then what was the day of the week on 29<sup>th</sup> January 2012? Monday
- If 14<sup>th</sup> April, 2011 was a Friday, then what is the day of the week on 10<sup>th</sup> June, 2012? Monday
- If today is Saturday then what will be the day of the week on the day which is 2 years and 60 days from today? Friday
- If a year starts on a Friday, then what is the maximum possible number of Sundays in that year? 52
- If a year starts and ends on a Tuesday, then what is the day of the week on 4<sup>th</sup> April in that year? Thursday
- If a year starts on a Friday but does not end on Friday, then what is the day of the week on

*15<sup>th</sup> May in that year? Sunday*

18. If 23<sup>rd</sup> March in a year is Tuesday, then what is the number of Fridays in that year? **53**
19. If today is Thursday, then what will be the day of the week on the 78<sup>th</sup> day from today? **Thursday**
20. If today is Sunday, then what was the day of the week 40 days ago? **Thursday**
21. Which is the first leap year after the leap year 2096? **2014**
22. If a year starts on Tuesday, then what is the day of the week on April 22<sup>nd</sup> of that year? **Monday**
23. If a year ends on Tuesday, then what is the day of the week on 5<sup>th</sup> August of that year? **Monday**
24. If 12<sup>th</sup> July 2002 was a Friday, then what was the day of the week on 15<sup>th</sup> May in 2006? **Thursday**
25. If 15<sup>th</sup> July 1996 was a Sunday, then what will be the day of the week on 22<sup>nd</sup> August in 2096? **Tuesday**
26. If 10<sup>th</sup> November in a year is Monday, then what is the day of the week on 2<sup>nd</sup> April in that year? **Wednesday**
27. Which of the following years will have the same calendar as that of 2010?
- 1) 2016      2) 2018      **3) 2021**      4) 2038      5) None
28. If holidays are declared only on and on all Sundays and 22<sup>nd</sup> April in a particular year is a holiday, is 23<sup>rd</sup> April of the next year a holiday?
- 1) Yes, it is a holiday      2) No, it is not a holiday      3) Holiday if it is a leap year  
 4) Holiday if it is not a leap      5) None
29. Which of the following years will have the same calendar as that of 2012?
- 1) 2018      2) 2023      3) 2020      **4) 2040**      5) None

### DATA SUFFICIENCY

**Directions (1-25):** Each of the questions below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question.

**Read both the statements and give answer**

**Mark answer (1)** if the data in statement I alone are sufficient to answer the question, while the data in statement

**II alone are not sufficient to answer the question;**

**Mark answer (2)** if the data in statement II alone are sufficient to answer the question, while the data in statement

**I alone are not sufficient to answer the question;**

**Mark answer (3)** if the data either in statement I alone or in statement II alone are sufficient to answer the question;

**Mark answer (4)** if the data given in both statements I and II together are not sufficient to

Answer the question and mark answer (5) if the question.  
 1. What is the color?  
 II. Yellow

*answer the question;*

*and*

**Mark answer (5) if the data in both statements I and II together are necessary to answer the question.**

1. What is the colour of the fresh grass?
  - I. Blue is called green, red is called orange, orange is called yellow.
  - II. Yellow is called white, white is called black, green is called brown and brown is called purple. (2)
2. What is the code for 'sky' in the code language?
  - I. In the code language, 'sky is clear' is written as 'de rafa'.
  - II. In the same code language, 'make it clear' is written as 'de gajo'. (4)
3. Which code word stands for 'good' in the coded sentence 'sin co bye' which means 'He is good'? (3)
  - I. In the same code language, 'co mot det' means 'they are good'.
  - II. In the same code language, 'sin mic bye' means 'he is honest'.
4. What does '\$' mean in a code language? (5)
  - I. '5\$#3' means 'flowers are really good'.
  - II. '7#35' means 'good flowers are available'.
5. What is the numerical code for 'water' in a certain code?
  - I. The code for 'give me water' is '719'. (4)
  - II. The code for 'you can bring water for me' is written as '574186'.
6. How is Divya related to Shaloo? (3)
  - I. Divya's mother is sister of Shaloo's father.
  - II. Shaloo is the daughter of Divya's grandfather's only child.
7. How is R related to M? (4)
  - I. M's brother is husband of P.
  - II. P is mother of R's sister.
8. In a row of five children A, B, C, D and E, who is standing in the middle? (5)
  - I. D is to the immediate right of E and B is to the immediate left of E.
  - II. B is at the extreme left of the row.
9. M, D, T and W are sitting around a circle facing at the centre. Who is to the immediate left of D? (1)
  - I. M is between T and W and D is to the immediate left of T.
  - II. D is second to the left of M.
10. P, Q, R and S are sitting around a circle facing at the centre. Who is to the immediate right of Q? (5)
  - I. R is between P and S.
  - II. S is to the immediate right of R.
11. Among M, N, D, P and K, who earns more than only the least earner among them?
  - I. N earns more than M and P but less than only D. (4)
  - II. M earns more than P who earns less than K.
12. Who among P, Q, R, S and T is the lightest? (4)
  - I. R is heavier than Q and T but lighter than S.
  - II. S is not the heaviest.
13. Madan is taller than Kamal and Sharad is younger than Arvind. Who among them is the youngest? (2)
  - I. Sharad is younger than Madan.
  - II. Arvind is younger than Kamal.

14. Among Monika, Anita, Sonal, Ratna and Tanvi, who came last for the programme?  
 I. Monika came after Anita but not after Tanvi. (5)  
 II. Ratna came after Tanvi but not after Sonal.
15. What is the shortest distance between Devipur and Durgapur? (4)  
 I. Durgapur is 20 kms away from Rampur.  
 II. Devipur is 15 kms away from Rampur.
16. Which village is to the North-east of village A? (1)  
 I. Village B is to the North of village A, villages C and D are to the East and West of village B respectively.  
 II. Village P is to the South of village A and village E is to the East of village P, village K is to the North of village P.
17. How many children are there between P and Q in a row of children? (5)  
 I. P is fifteenth from the left in the row.  
 II. Q is exactly in the middle and there are ten children towards his right.
18. What is sumit's position from the right end in a row of children?  
 I. There are 10 children between Sumit and Rajan. (4)  
 II. Rajan is twentieth from the left end of the row of children.
19. On which date of the month was Anjali born in February 2004? (5)  
 I. Anjali was born on an even date of the month.  
 II. Anjali's birth date was a prime number.
20. What is the monthly salary of Prashant? (5)  
 I. Prashant gets 15% more than Sumit while Sumit gets 10% less than Lokesh.  
 II. Lokesh's monthly salary is Rs. 2500.
21. How is M related to N? (1)  
 I. P, who has only two kids, M and N, is the mother-in-law of Q, who is sister-in-law of N.  
 II. R, the sister-in-law of M, is the daughter-in-law of S, who has only two kids, M and N.
22. In a row of five buildings - P, Q, R, S and T, which building is in the middle? (4)  
 I. Buildings S and Q are at the two extreme ends of the row.  
 II. Building T is to the right of the building R.
23. In which direction is Rahul facing?  
 I. In the early morning Rahul was standing in front of a puppet and the shadow of puppet was falling to the right of Rahul. (3)  
 II. In the early morning Rahul was standing on the ground. His shadow was falling behind him when he turned to his left.
24. How many children are there in the row of children facing North? (3)  
 I. Visakha who is fifth from the left end is eighth to the left of Asish who is twelfth from the right end.  
 II. Rohit is fifth to the left of Nisha who is seventh from the right end and eighteenth from the left end.
25. What is the rank of P from the bottom in a class of 30 students? (3)  
 I. M is third from the top and there are 5 students between M and P.  
 II. The rank of K is fourth from the bottom and there are 17 students between K and P.

PUZZLE TEST

	Eng.	Doc	Arch	Phar	Law	Jou Path
B	Y	N	N	N	N	N
M	N	N	N	N	N	N
T	N	N	N	Y	N	N
R	N	N	Y	N	N	Y
K	N	N	N	N	N	N
D	N	Y	N	N	Y	N

B - Eng. Lower  
 M - Path. Upper  
 T - Pharm Middle  
 R - Archit Lower  
 K - Journ. Middle  
 H - Lawyer Upper  
 D - Doctor Middle

1. Study the following information carefully and answer the questions given below.  
 B,M,T,R,K,H and D are travelling in a train compartment with III-tier sleeper berth. Each of them has a different profession of Engineer, Doctor, Architect, Pharmacist, Lawyer, Journalist and Pathologist. They occupied two lower berths, three middle berths and two upper berths. B, the Engineer, is not on the upper berth. The Architect is the only other person who occupies the same type of berth as that of B. M and H are not on the middle berth and their professions are Pathologist and Lawyer respectively. T is a Pharmacist. D is neither a Journalist nor an Architect. K occupies the same type of berth as that of the Doctor.

1. Who is the Architect?

- 1) D      2) H      3) R      4) Data inadequate

5)

None

2. What is D's profession?

- 1) Pharmacist    2) Lawyer    3) Doctor    4) Engineer

✓ Data

inadequate

3. Which of the following pairs occupy the lower berth?

- 1) BT    2) BD    3) BK    4) Data inadequate

✓ None

DKT

- 2) HKT    3) DKR    4) DHT

5) None

4. Which of the following groups occupies the middle berth?

- 1) K - Upper - Lawyer    2) D - Upper - Doctor  
3) M - Lower - Journalist    4) R - Lower - Architect

5) All correct

2. Study the following information carefully and answer the questions given below.

Seven boys A, D, Y, U, P, Q and J live in three different buildings - Ashiana, Top-view and Ridge. Each of them is flying kites of different colours i.e. red, green, blue, white, black, yellow and pink, not necessarily in that order. Not more than three or less than two stay in any of the buildings. Q is flying a pink kite and lives in the same building as only J. i.e. Ashiana. Y is flying a black kite and does not live in Ridge building. U does not live in the same building as A or P and is flying a yellow coloured kite. D lives in Ridge building with only one more person and is flying a green kite. None in the top-view building flies a white kite. P does not fly a blue kite.

1. Who live in Ridge building?

- 1) J,D,U    2) D,A,P    3) Y,A,P    4) A,P

5) None

2. Who is flying the blue kite?

- 1) A    2) J    3) P    4) Data inadequate    5) None

A

J

P

3. Who flies the red kite?

- 1) A    2) J    3) P    4) Data inadequate    5) None

A

J

P

4. Who stay in Top-view building?

- 1) Y,J,P    2) A,P    3) A,P,D    4) Y,U,J    5) None

Y,J,P

A,P

A,P,D

Y,U,J

✓ None

5. What coloured kite is J flying?

- 1) Blue    2) White    3) Black    4) Data inadequate    5)

Blue

White

Black

✓ Data inadequate

Boy	Buiding	Kite
A	Top	Blue
D	Ridge	Green
Y	Top	Black
U	Ridge	Yellow
P	Top	Red
Q	Ashiana	Pink
J	Ashiana	white

None

**3. Study the following information carefully and answer the questions given below.**

i) A,B,C,D,E,F and G are sitting on a wall and all of them are facing east.

ii) C is on the immediate right of D.

iii) B is at an extreme end and has E as his neighbour.

v) D is sitting third from the south end.

B → end

E

G → Right to E

iv) G is between E and F.

1) A      2) C      3) D      4) F      5) None

F → East

Which of the following pairs of people are sitting at the extreme ends?

1) AB      2) AE      3) CB      4) FB      5) Can't be

D

determined

C

3. Name the person who should change place with C such that he gets the third place from the north end.

A → end

1) E      2) F      3) G      4) D      5) None

4. Immediately between which of the following pairs of people is D sitting?

1) AC      2) AF      3) CE      4) CF      5) None

5. Which of the conditions (i) to (v) given above is not required to find out the place in which A is sitting?

1) (i)      2) (ii)      3) (iii)      4) All are required      5) None

**4. Study the following information carefully and answer the questions given below.**

i) A,B,C,D,E,F and G are sitting in a circle facing at the centre and playing cards.

ii) E is neighbour of A and D. iii) G is not between F and C. iv) F is to the immediate right of A.

1. Which of the following does not have the pair of persons sitting adjacent to each other?

1) BA      2) CB      3) DE      4) GD      5) None of these

2. Which of the following pairs has the second person sitting immediately to the right of the first?

1) AB      2) CB      3) EA      4) DG      5) None of these

3. What is the position of F?

1) Third to the left of C      2) Second to the right of C  
3) To the immediate left of A      4) To the immediate right of B

None of these

4. Who are the neighbours of B?

1) A and F      2) C and D      3) F and C      4) Data inadequate      5) None of these

5. Which of the following persons are sitting adjacent to each other from left to right in the order as shown?

1) BGC      2) FBC      3) CDG      4) EDG      5) None of these

**5. Study the following information carefully and answer the questions given below.**

A blacksmith has five iron articles, A,B,C,D and E, each having a different weight.

i) A weighs twice as much as B. ii) B weighs four and a half times as much as C.

iii) C weighs half as much as D. iv) D weighs half as much as E.

v) E weighs less than A but more than C.

1. Which of the following is the lightest in weight?

1) A      2) B      3) C      4) D      5) E

2. E is lighter in weight than which of the other two articles? → weight = x, D's = 2x

1) A,B      2) D,C      3) A,C      4) D,B      5) B,E      E's = 4x

B's = 4.5x

A > B > E > D > C

A's = 9x

$$C's = 2x, D's = 2x, E's = 4x, B's = 4.5x, A's = 9x$$

$$A > B > E > D > C$$

- E is heavier in weight of the following two articles?
- 1) D,B       2) D,C      3) A,C      4) A,B      5) None
  4. Which of the following articles is the heaviest in weight?  
 A      2) B      3) C      4) D      5) E
  5. Which of the following represents the descending order of weights of the articles?  
 1) A,B,E,D,C      2) B,D,E,A,D      3) E,C,D,A,B      4) C,A,D,B,E      5) A,B,D,E,C
  6. Which of the above given statements is not necessary to determine the correct order of articles according to their weights?  
1) (i)      2) (ii)      3) (iii)      4) (iv)       5) (v)

6. Study the following information carefully and answer the questions given below.

B, D, P, M, F, H, K and W are eight friends who have completed their MBA programme with specialization - Marketing, personnel, Operations, Systems and Finance. Three of them have passed with dual specialization. Operations and Systems were not offered as dual specialization with any of the remaining three specializations. P has passed with marketing and finance and earns the least. B has passed with Operations and earns more than F, D and K. W has passed with personnel and earns less than only M who has passed with a dual specialization. B is third from the top when they are arranged in descending order of earnings. D earns more than K but less than F. No two of them have same earning. K, who earns more than H, has passed with Marketing whereas H has passed with dual specialization of Personnel and Finance. None of the three is having the same set of dual specialization. Two of them are having systems specialization.

$$B > F, B > D, B > K, M > W, F > D > K, K > H \Rightarrow M > W > B > F > D > K > H > P$$

1. Which of the following pairs has the Systems specialization?  
1) BF      2) BM      3) FH      4) Data inadequate       5) None
2. Who among them earns more than F?  
1) Only M and B      2) Only M, W and D      3) Only M and W      4) Only W, B and D
- None
3. Who among them earns more than only P?  
 1) Only H      2) Only M      3) Only W      4) Data inadequate      5) None
4. Which of the following specializations is opted for most among them as either single or one of the dual specializations?  
1) Marketing      2) Personnel      3) Systems      4) Finance       5) None
5. Which of the following dual specialization is applicable to M?  
 1) Personnel, Marketing      2) Marketing, Finance  
3) Personnel, Finance      4) Data inadequate      5) None

7. Study the following information carefully and answer the questions given below.

Six films - P, Q, R, S, T and U are to be released on consecutive Fridays. The schedule of the release is to be in accordance with the following conditions.

i) P must be released a week before T.      ii) R must not be released immediately after the first release.

Order: - U, Q, P, T, R.

iii) Q must be released on the Friday following the Friday on which U is released.  
iv) S must be released on fifth Friday and should not be immediately preceded by Q.  
v) T must not be released in the last.

1. Which of the following films preceded T?  
 1) P      2) Q      3) S      4) U      5) None
2. Which of the following films released immediately after Q?  
 1) P      2) R      3) T      4) U      5) None
3. Film R cannot be released on which of the following Fridays in addition to second Friday?

- |                                                           |           |            |            |         |
|-----------------------------------------------------------|-----------|------------|------------|---------|
| 1) First                                                  | 2) Third  | 3) Fourth  | 4) Fifth   | 5)      |
| None                                                      |           |            |            |         |
| 4. In between which of the two films S is to be released? |           |            |            |         |
| 1) Q and T                                                | ✓ R and T | 3) P and T | 4) T and U | 5) None |
| 5. Which of the following films released first?           |           |            |            |         |
| 1) P                                                      | 2) Q      | 3) R       | ✓ U        | 5) None |

**8. Study the following information carefully and answer the questions given below.**

P,Q,R,S,T,U and V are seven professors. Each one teaches a different subject from Physics, Chemistry, Biology, English, Mathematics, Economics and Geography, not necessarily in the same order. Each of them teaches one day each one seven days of the week from Monday to Sunday not necessarily in the same order. R teaches Biology on Friday. Q teaches Mathematics on the previous day of the day on which the professor teaches Physics. V teaches on Sunday but does not teach Chemistry or English. S teaches Economics on the previous day on which U teaches. P teaches Geography on Tuesday. T does not teach English.

Mon Chem T  
Tues Geo P  
Wed Mat Q  
Thurs Phy U  
Fri Bio R  
Sat Eco S  
Sun Eng ✓

- |                                 |               |                                |                    |    |
|---------------------------------|---------------|--------------------------------|--------------------|----|
| 1. Which subject does T teach?  |               |                                |                    |    |
| ✓ 1) Chemistry                  | 2) Physics    | 3) Either Chemistry or Physics | 4) Data inadequate | 5) |
| None                            |               |                                |                    |    |
| 2. Which subjects does U teach? |               |                                |                    |    |
| ✓ 1) Physics                    | 2) English    | 3) Either Physics or English   | 4) Data inadequate | 5) |
| None                            |               |                                |                    |    |
| 3. On which day does T teach?   |               |                                |                    |    |
| ✓ 1) Monday                     | 2) Wednesday  | ✓ Thursday                     | 4) Data inadequate | 5) |
| None                            |               |                                |                    |    |
| 4. On which day does U teach?   |               |                                |                    |    |
| 1) Wednesday                    | ✓ 2) Thursday | 3) Wednesday or Thursday       | 4) Data inadequate | 5) |
| None                            |               |                                |                    |    |
| 5. Which subject does V teach?  |               |                                |                    |    |
| 1) Chemistry                    | ✓ 2) English  | 3) Biology                     | 4) Data inadequate | 5) |
| None                            |               |                                |                    |    |

**9. Study the following information carefully and answer the questions given below.**

From amongst six boys A, B, C, D, E and F and five girls P, Q, R, S and T, a team of six is to be selected under the following conditions?

- i) A and D have to be together.
- ii) C cannot go with S.
- iii) S and T have to be together
- iv) B cannot be teamed with E
- v) D cannot go with P
- vi) B and R have to be together
- vii) C and Q have to be together

- If there be five boys in the team, the lone girl member is
 

1) P	✓ 2) Q	3) R	4) S	5)
None				
- If including P, the team has three girls, the members are
 

1) B,C,F,Q,R	2) A,D,E,S,T	3) A,D,B,S,T	4) B,F,R,S,T	5) None
--------------	--------------	--------------	--------------	---------
- If the team including C consists of four boys, the members of the team other than C are
 

1) A,D,E,P,Q	✓ 2) A,B,D,Q,R	3) D,E,F,A,Q	4) B,E,F,R,Q	5) None
--------------	----------------	--------------	--------------	---------
- If four members including E have to be boys, the members other than E are

) A,B,C,Q,R  
If four members have to be  
1) B,C,P,Q,R,S  
2) B,F,P,R,S  
10. Study the

- 1) A,B,C,Q,R       2) A,D,F,S,T      3) B,C,F,Q,R      4) A,C,D,F,Q      5) None  
*If four members have to be girls, the members of the team are*  
 1) B,C,P,Q,R,S       2) B,F,P,R,S,T      3) B,C,Q,R,S,T      4) B,C,P,Q,R,T      5) None

- 10. Study the following information carefully and answer the questions given below.**  
 A team of five is to be selected from amongst five boys A,B,C,D and E and four girls P,Q,R and S. Some criteria for selection are:  
 i) A and S have to be together.      ii) P cannot be put with R.      iii) D and Q cannot go together.  
 iv) C and E have to be together.      v) R cannot be put with B.  
*Unless otherwise stated, these criteria are applicable to all the questions below.*

1. If two of the members have to be boys, the team will consist of  
 1) A,B,S,P,Q      2) A,D,S,Q,R      3) B,D,S,R,Q      4) C,E,S,P,Q      5)  
*None*
2. If R be one of the members, the other members of the team are  
 1) P,S,A,D      2) Q,S,A,D      3) Q,S,C,E       4) S,A,C,E      5) None
3. If two of the members are girls and D is one of the members, the members of the team other than D are  
 1) P,Q,B,C      2) P,Q,C,E       3) P,S,A,B      4) P,S,C,E      5) None
4. If A and C are members, the other members of the team cannot be  
 1) B,E,S      2) D,E,S      3) E,S,P       4) P,Q,E  
*5) None*
5. If including P at least three members are girls the members of the team other than P are  
 1) Q,S,A,B      2) Q,S,B,D      3) Q,S,C,E      4) R,S,A,D      5) None

- 11. Study the following information carefully and answer the questions given below.**  
 i) In a family of six persons - P,Q,R,S,T and U - there are three gents and three ladies. There are two married couples and two persons are unmarried. Each one of them reads different newspapers, viz. The Times of India, Indian Express, Hindustan Times, Business Herald, Navbharat Times, and The Tribune  
 ii) T who reads Indian express, is mother-in-law of P who is wife of R. S is the father of U and He does not read The Times of India or The Tribune. Q reads Navbharat Times and she is the sister of U who reads Hindustan Times. R does not read The Tribune.

1. How many sons does T have?  
 1) One       2) Two      3) Three      4) Fourth      5) None
2. Who among the following reads The Times of India?  
 1) P       2) R      3) S      4) Data inadequate      5) None
3. Which of the following newspapers is read by P?  
 1) Business Herald      2) The Times of India      3) Navbharat Times  
 4) Data inadequate       5) None
4. How is U related to T?  
 1) Son      2) Daughter      3) Brother      4) Data inadequate      5) None
5. Which of the following is one of the married couples?  
 1) QU      2) TU      3) SQ       4) ST      5) None

- 12. Study the following information carefully and answer the questions given below.**  
*Of the five boys A,B,C,D and E, two are good, one is poor and two are average in*

studies. Two of them study in post-graduate classes and three in under-graduate classes. One comes from a rich family, two from middle-class families and two from poor families. One of them is interested in Music, two in acting and one in sport. Of those studying in under-graduate classes, two are average and one is poor in studies. Of the two boys interested in acting, one is a post graduate student. The one interested in Music comes from a middle-class family. Both the boys interested in acting are not industrious. The two boys coming from middle-class families are average in studies and one of them is interested in acting. The boy interested in sports comes from a poor family, while the one interested in music is industrious. E is industrious good in studies, comes from a poor family and is not interested in acting music or sports. C is poor in studies, in spite of being industrious. A comes from a rich family and is not industrious but good in studies. B is industrious and comes from a middle-class family.

1. Name the boy interested in sports.  
1) A      2) B      3) C      4) D      5) None
2. Name the boy interested in music  
1) A      2) B      3) C      4) D      5) None
3. Name the middle-class family by interested acting.  
1) A      2) B      3) C      4) D      5) None
4. Name the boys studying in post-graduate classes.  
1) A,D      2) A,E      3) B,C      4) D,E      5) None
5. Name the boy who is not industrious and is average in studies.  
1) A      2) B      3) C      4) D      5) None

All are females except P

1. **Statements** : All rats are dogs. All dogs are cats. (1)  
**Conclusions:** I. All rats are cats. II. All cats are rats.
2. **Statements** : All pens are roads. All roads are houses. (2)  
**Conclusions:** I. All houses are pens. II. Some houses are pens.
3. **Statements** : All huts are mansions. All mansions are temples. (5)  
**Conclusions:** I. Some temples are huts. II. Some temples are mansions.
4. **Statements** : All tubes are handles. All cups are handles. (4)  
**Conclusions:** I. All cups are tubes. II. Some handles are not cups.
5. **Statements** : All roads are waters. Some waters are boats. (4)  
**Conclusions:** I. Some boats are roads. II. All waters are boats.
6. **Statements** : All jungles are tigers. Some tigers are horses. (3)  
**Conclusions:** I. Some horses are jungles. II. No horse is jungle.
7. **Statements** : All artists are smokers. Some smokers are drunkards. (4)  
**Conclusions:** I. All smokers are artists. II. Some drunkards are not smokers.
8. **Statements** : Some swords are sharp. All swords are rusty. (1)  
**Conclusions:** I. Some rusty things are sharp. II. Some rusty things are not sharp.
9. **Statements** : All fish are tortoise. No tortoise is a crocodile. (5)  
**Conclusions:** I. No crocodile is a fish. II. No fish is a crocodile.
10. **Statements** : All flowers are trees. No fruit is tree. (5)  
**Conclusions:** I. No fruit is flower. II. Some trees are flowers.
11. **Statements** : No magazine is cap. All caps are cameras. (3)  
**Conclusions:** I. No camera is magazine. II. Some cameras are magazines.
12. **Statements** : Some desks are caps. No cap is red. (1)  
**Conclusions:** Some caps are desks. II. No desk is red.
13. **Statements** : No bat is ball. No ball is wicket. (4)  
**Conclusions:** I. No bat is wicket. II. All wickets are bats.
14. **Statements** : All poles are guns. Some boats are not poles. (5)  
**Conclusions:** I. All guns are boats. II. Some boats are not guns.
15. **Statements** : All fruits are lions. All lions are foxes. Some foxes are elephants.  
**Conclusions:** I. All fruits are foxes. II. Some fruits are elephants. (1)
16. **Statements** : Some cars are wheels. All wheels are branches. Some branches are tins.  
**Conclusions:** I. Some cars are branches. II. Some tins are branches. (1)
17. **Statements** : No stick is door. All doors are pens. Some pens are houses.  
**Conclusions:** I. No stick is house. II. Some pens are doors. (2)
18. **Statements** : All men are parrots. Some parrots are crows. All crows are hens.  
**Conclusions:** I. Some men are hens. II. No man is hen. (3)
19. **Statements** : Some papers are dogs. Some dogs are windows. All windows are trees.  
**Conclusions:** I. Some windows are papers. II. Some papers are trees. (4)

**Directions (20-29):** In each of the following questions, two statements are given followed by three or four conclusions numbered I, II, III and IV. You have to take the given statements to be true even if they seem to be at variance from the commonly known facts and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

20. **Statements** : All branches are flowers. All flowers are leaves.  
**Conclusions:** I. All branches are leaves. II. All leaves are branches.  
 III. All flowers are branches. IV. Some leaves are branches.

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**21. Statements** : All aeroplanes are trains. Some trains are chairs.

**Conclusions:** I. Some aeroplanes are chairs. II. Some chairs are aeroplanes.

1) Only I follows 2) Only I and IV follow 3) Only II and III follow  
 4) All follow 5) None follows

**22. Statements** : Some clothes are marbles. Some marbles are bags.

**Conclusions:** I. No cloth is a bag. II. All marbles are bags.

1) Only either I or IV follows 2) Only I and II follow 3) Only II and III follow  
 4) Only either I or III follows 5) None follows  
 5) None follows

**23. Statements** : Some bags are pockets. No pocket is a pouch.

**Conclusions:** I. No bag is a pouch. II. Some bags are not pouches.

III. Some pockets are bags. IV. No pocket is a bag.

1) None follows 2) Only I and III follow 3) Only II and III follow  
 4) Only either I or IV follow 5) All follow

**24. Statements** : All jungles are buses. All books are buses. All fruits are books.

**Conclusions:** I. Some fruits are jungles. II. Some buses are books.

III. Some buses are jungles. IV. All fruits are buses.

1) Only I, II and III follow 2) Only I, II and IV follow  
 Only II, III and IV follow  
 4) All follow 5) None of these

**25. Statements** : All players are spectators. Some spectators are theatres. Some theatres are dramas.

**Conclusions:** I. Some dramas are spectators. II. Some players are dramas.

III. Some theatres are players. IV. All spectators are players.

1) None follows 2) Only I and III follow 3) Only II follows  
 4) Only II and IV follow 5) All follow

**26. Statements** : All myths are fictions. No fiction is novel. All novels are stories.

**Conclusions:** I. No myth is novel. II. Some fictions are novels.

III. Some fictions are myths. IV. Some myths are novels.

1) Only either I or II and both III and IV follow 2) Only either I or IV and II follow  
 3) Only either I or IV and both II and III follow 4) All follow  
 5) None of these

**27. Statements** : No paper is pen. No pen is pencil. All erasers are papers.

**Conclusions:** I. Some papers are erasers. II. No pencil is eraser.

III. No pen is eraser. IV. All papers are erasers.

1) Only I and II follow 2) Only II and III follow  
 3) Only I, II and III follow 4) All follow 5) None of these

**28. Statements** : All doors are roads. No road is fruit. Some flowers are doors.

**Conclusions:** I. Some fruits are doors. II. Some fruits are flowers.

III. Some roads are flowers. IV. No fruit is flower.

1) Only either II or III and IV follow 2) Only either II or IV and III follow  
 3) Only either II or IV and I follow 4) Only either II or IV follows  
 5) All follow

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29. **Statements** : No man is sky. No sky is road. Some men are roads.

**Conclusions:** I. No road is man. II. No road is sky.  
III. Some skies are men. IV. All roads are men.

- 1) None follows  
2) Only I follows  
3) Only II and III follow  
4) Only I and III follow  
5) None of these

**Directions (30-40):** In each of the questions below are given three statements followed by three conclusions

numbered I, II and III. You have to take the given statements to be true even if they seem to be at variance from the commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

30. **Statements** : All shares are debentures. No debenture is an equity.

**Conclusions:** I. No equity is a share. II. Some debentures are shares.  
III. No share is an equity.

- 1) Only I follows  
2) Only II follows  
3) Only III follows  
4) All follow  
5) None follows

## PROBABILITY

Q1. In a box carrying one dozen of oranges, one third have become bad. If 3 oranges are taken out from the box at random, what is the probability that at least one oranges out of the three oranges picked up is good?

- (a)  $1/55$        $n(S) = 12C_3 = (12 \times 11 \times 10) / (3 \times 2) = 2 \times 11 \times 10 = 220$   
 ✓ (b)  $54/55$       No. of selecting of 3 oranges out of the total 12 orange  
 (c)  $45/55$        $= 4C_3 = 4$   
 (d)  $3/55$   
 (e) None of these       $\therefore n(E) = 220 - 4 = 216$

$$\therefore P(E) = \frac{n(E)}{n(S)} = \frac{216}{220} = \frac{54}{55}$$

Q2. A basket contains 5 white and 9 black balls. There is another basket which contains 7 white and 7 black balls. One ball is drawn from either of the two baskets. What is the probability of drawing a black ball?

- (a)  $3/7$       for a basket probability is  $9/14$   
 (b)  $5/7$       for b basket probability is  $7/14$   
 ✓ (c)  $4/7$   
 (d)  $8/15$   
 (e) None of these      probability of a & b is  $1/2$   
 $= \frac{9}{14} \times \frac{1}{2} + \frac{7}{14} \times \frac{1}{2} = \frac{16}{28} = \frac{4}{7}$

Q3. A bag contains 5 blue and 4 black balls. Three balls are drawn at random. What is the probability that 2 are blue and 1 is black?

- (a)  $1/3$        $n(S) = 9C_3$   
 (b)  $2/5$   
 (c)  $1/6$        $n(E) = 5C_2 * 4C_1$   
 (d)  $1/5$   
 ✓ (e) None of these       $P(E) = n(E)/n(S)$   
 $= (5C_2 \times 4C_1) / 9C_3 = 10/21$

Q4. An urn contains 9 red, 7 white and 4 black balls. A ball is drawn at random. What is the probability that the ball drawn is not red?

- (a)  $1/11$   
 (b)  $9/20$   
 (c)  $2/11$   
 ✓ (d)  $11/20$   
 (e) None of these      Total balls = 9 red + 7 white + 4 black  
 $= 20$   
 one ball is drawn at random  
 $\therefore n(S) = 20C_1$   
 not red  $\Rightarrow n(C) = (7+4)C_1 = 11C_1$   
 $P(C) = \frac{n(C)}{n(S)} = \frac{11C_1}{20C_1} = \frac{11}{20}$

Q1. In a simultaneous throw of two dice, what is the probability of getting a total of 10 or 11?

- (a)  $7/12$
- (b)  $5/36$
- (c)  $1/6$
- (d)  $1/4$
- (e) None of these

$(4,6), (5,5), (5,6), (6,4), (6,5) \Rightarrow 5$  ways

$$\text{probability} = \frac{5}{36}$$

Q6. In a single throw of two dice what is the probability of not getting the same number on both the dice?

- (a)  $1/6$
- (b)  $2/3$
- (c)  $5/6$
- (d)  $1/3$
- (e) None of these

$$n(S) = 36$$

$$E = \{(1,1), (2,2), (3,3), (4,4), (5,5), (6,6)\}$$

$$P(E) = 6/36 = 1/6$$

$$P(\text{not } E) = 1 - 1/6 = 5/6$$

Q7. One card is drawn at random from a pack of 52 cards. What is the probability that the card drawn is either a red or a king?

- (a)  $6/13$
- (b)  $1/2$
- (c)  $7/13$
- (d)  $27/52$
- (e) None of these

$$n(S) = 52$$

26 red cards (including 2 kings) + 2 kings.

$$n(E) = 28$$

$$\therefore P(E) = \frac{n(E)}{n(S)} = \frac{28}{52} = \frac{7}{13}$$

Q8. A bag contains 3 red, 5 yellow and 4 green balls. 3 balls are drawn randomly. What is the probability that the balls drawn contain balls of different colours?

- (a)  $4/15$
- (b)  $3/11$
- (c)  $1/12$
- (d)  $5/14$
- (e) None of these

$$\text{Total} = 3+5+4 = 12$$

$$n(S) = 12C_3 = \frac{12 \times 11 \times 10}{3 \times 2} = 220$$

$$n(E) = 3C_1 \times 5C_1 \times 4C_1$$

$$= 3 \times 5 \times 4 = 60$$

$$P(E) = \frac{60}{220} = \frac{3}{11}$$

Q9. A bag contains 5 red, 7 yellow and 6 green balls. 3 balls are drawn randomly. What is the probability that balls drawn contain exactly 2 green balls?

- (a)  $14/68$
- (b)  $13/68$
- (c)  $15/91$
- (d)  $15/68$

$$\text{Total} = 5+7+6 = 18$$

$$n(S) = 18C_3 = \frac{18 \times 17 \times 16}{3 \times 2} = 816$$

(e) None of these 2 green can be selected from 6 green  $\therefore 6C_2 =$  remaining  $= 18-6 = 12$

$$n(E) = 6C_2 \times 12C_1 = \frac{6 \times 5}{2} \times 12 = 252 \Rightarrow P(E) = \frac{252}{816} = \frac{21}{68}$$

Q10. A bag contains 5 red, 6 yellow and 7 green balls. 3 balls are drawn randomly. What is the probability that the balls drawn contain no red ball?

- (a)  $55/282$
- (b)  $55/272$
- (c)  $143/408$
- (d)  $143/406$
- (e) None of these

$$n(S) = 18C_3 = 816$$

3 balls can be selected from 6 yellow + 7 green =  $13 = 13C_3$  ways

$$n(E) = 13C_3 = \frac{13 \times 12 \times 11}{3 \times 2} = 286 \therefore P(E) = \frac{286}{816} = \frac{143}{408}$$

Q11. A box contains 4 green, 5 yellow and 4 white marbles. 3 marbles are drawn at random. What is the probability that all the three marbles are not of same colour?

- (a)  $9/143$
- (b)  $134/143$
- (c)  $8/143$
- (d)  $135/143$
- (e) None of these

$$\text{Total} = 13 = 13C_3 = \frac{13 \times 12 \times 11}{3 \times 2} = 286$$

$$\text{same colour} = 4C_3 + 5C_3 + 4C_3 = 4 + 10 + 4 = 18$$

$$\text{Probability of same colour} = \frac{18}{286} = \frac{9}{143}$$

$$\text{Probability of not same colour} = 1 - \frac{9}{143} = \frac{143-9}{143} = \frac{134}{143}$$

Q12. A bag contains 4 red and 7 black balls. Two draws of three balls each are made, the ball being replaced after the first draw. What is the chance that the balls were red in the first draw and black in the second?

- (a) 28/5445
- (b) 25/5448
- (c) 28/4554
- (d) 25/4554
- (e) None of these

$$\text{probability} = \frac{(4 \times 3 \times 2) \times (7 \times 6 \times 5)}{(11 \times 10 \times 9)}$$

$$= \frac{5040}{980100} = \frac{28}{5445}$$

Q13. A bag contains 9 red and 7 white balls. Four balls are drawn out one by one and not replaced. What is the probability that they are alternatively of different colours?

- (a) 9/65
- (b) 6/65
- (c) 9/130
- (d) 8/130
- (e) None of these

$$\Rightarrow \left[ \frac{9 \times 7 \times (9-1) \times (7-1)}{(9+7)(9+7-1)(9+7-2)(9+7-3)} \right] \times 2$$

$$= \frac{3024}{43680} = \frac{9}{130}$$

Q14. A basket contains 5 white and 9 black balls. There is another basket which contains 7 white and 7 black balls. One ball is to be drawn from either of the two baskets. What is the probability of drawing a white ball?

- (a) 4/7
- (b) 6/7
- (c) 3/7
- (d) 2/7
- (e) None of these

$$\Rightarrow \frac{1}{2} \left[ \frac{5}{14} + \frac{7}{14} \right] = \frac{1}{2} \left[ \frac{12}{14} \right] = \frac{3}{7}$$

Q15. 8 persons are seated at a round table. What is the probability that 3 particular persons sit together?

- (a) 2/7
- (b) 1/7
- (c) 3/14
- (d) 3/14
- (e) None of these

$$= \frac{(8-3)! 3!}{(8-1)!} = \frac{5! 3!}{7!} = \frac{3 \times 2}{7 \times 6} \times \frac{1}{7}$$

## EXERCISE 8A

**Directions (Questions 1 to 10):** Each of the questions below contains three elements. These three elements may or may not have some linkage. Each group of the elements may fit into one of the diagrams at (a), (b), (c), (d) and (e). You have to indicate groups of elements in each of the questions fit into which of the diagrams given below. The letter indicating the diagram is the answer.



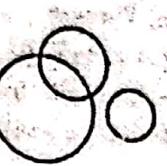
(a)



(b)



(c)



(d)



(e)

1. Vegetables, Potato, Cabbage b
2. Table, Chair, Furniture b
3. Week, Day, Year a
4. Judge, Thief, Criminal d
5. Husband, Wife, Family d
6. Square, Rectangle, Polygon c
7. Bus, Car, Vehicle d
8. Anxiety, Intelligence, Strength a
9. House, Bedroom, Bathroom e
10. Mustard, Barley, Potato c

(Bank P.O. 2003)

(I.B.P.S. 2002)

(M.A.T. 2003)

(R.R.B. 2004)

(S.S.C. 2003)

(M.B.A. 2005)

(Bank P.O. 2003)

(R.R.B. 2006)

(Bank P.O. 2004)

**Directions (Questions 11 to 20):** In the following questions, three classes are given. Out of the five figures that follow, you are to indicate which figure will best represent the relationship amongst the three classes.



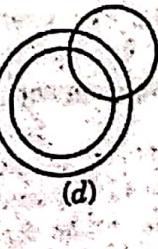
(a)



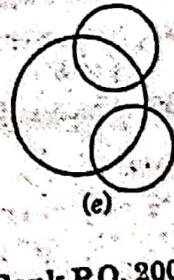
(b)



(c)



(d)



(e)

11. Elephants, Wolves, Animals c
12. Metal, Iron, Chlorine b
13. Mammals, Cows, Crows b
14. Women, Mothers, Widows d
15. Authors, Teachers, Men a
16. Kerala, Bihar, India c
17. Automobiles, Cars, Motor-cycles c
18. Brick, House, Bridge c
19. Tea, Coffee, Beverages c
20. Boys, Students, Athletes c

(Bank P.O. 2003)

(S.S.C. 2002)

(S.S.C. 2000)

(M.A.T. 1999)

(Bank P.O. 2003)

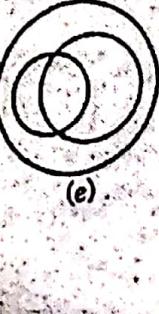
**Directions (Questions 21 to 30):** Each of these questions below contains three groups of things. You are to choose from the following five lettered diagrams, the one that depicts the correct relationship among the groups of things in each question.



(a)



(b)



(c)



(d)

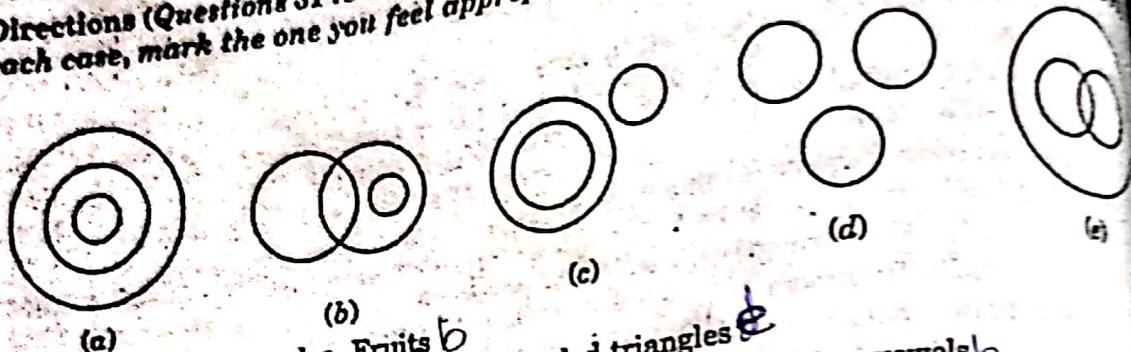


(e)

21. Tennis fans, Cricket Players, Students *a*  
 22. Flowers, Clothes, White *c*  
 23. Smokers, Lawyers, Non-smokers *a*  
 24. Human beings, Teachers, Graduates *c*  
 25. Males, Fathers, Doctors *e*  
 26. Fathers, Uncles, Men *c*  
 27. Musicians, Men, Women *a*  
 28. Whales, Fishes, Crocodiles *b*  
 29. Anti-social elements, Pickpockets, Blackmailers *b*  
 30. Tall men, Black haired people, Indians *a*

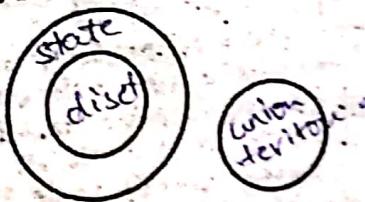
Directions (Questions 31 to 35) : Given below are five possible membership schemes. In each case, mark the one you feel appropriate description of the three listed items.

(PGDM, 2003)



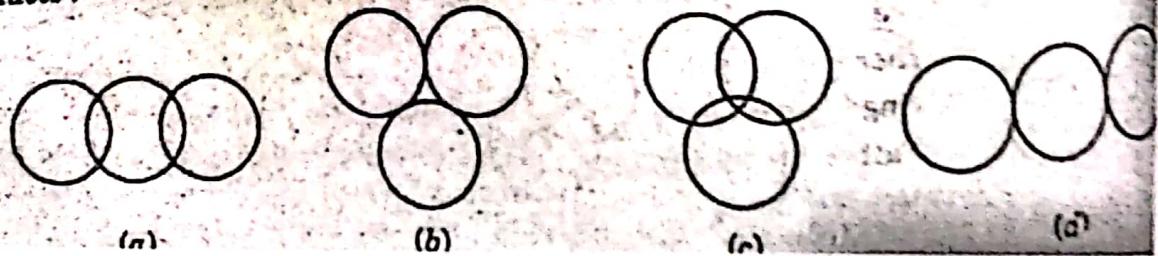
31. Apple, Golden apples, Fruits *b*  
 32. Triangles, Scalene triangles, Right-angled triangles *e*  
 33. Words with no vowel, Words with one vowel, Words with two vowels *b*  
 34. Words with no vowel, Words with at most one vowel, Words with at least two vowels *b*  
 35. Names beginning with a vowel, Names beginning with E, Names beginning with A or P *e*

36. Which of the following sets is best represented in the given diagram? (R.R.B.)



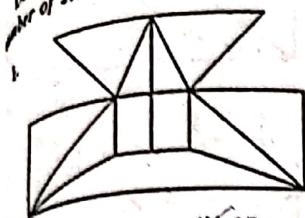
- (a) Animals, Insects, Cockroaches  
 (b) Animals, Males, Females and Hermaphrodites  
 (c) States, Districts, Union Territories  
 (d) Country, States, Districts

37. In the Accounts Department of a company, there are some who are only chartered accountants and some who are only cost accountants. A few hold both chartered and cost Accountancy qualifications. Besides these, there are others who hold Management Accountancy qualifications. Some of these Management Accountants have also done either Chartered or Cost Accountancy or both. Which of the following figures represents these facts? (S.S.C.)



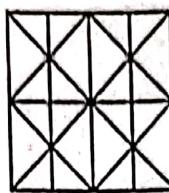
## EXERCISE 4

Directions (Questions 1 to 4) : In each of the following questions, find the minimum number of straight lines required to make the given figure.



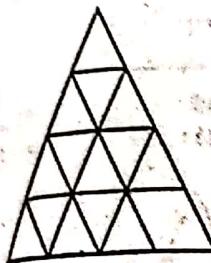
- (a) 16  
(b) 17  
(c) 18  
(d) 19

$$\begin{aligned} H &= 3+1+4 \\ V &= 5 \\ D &= 4+4 \\ &\hline 17 \end{aligned}$$



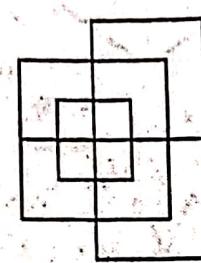
- (a) 11  
(b) 14  
(c) 16  
(d) 17

$$\begin{aligned} H &= 3 \\ V &= 5 \\ D &= 3+3 \\ &\hline 14 \end{aligned}$$



- (a) 9  
(b) 11  
(c) 15  
(d) 16

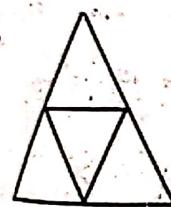
$$\begin{aligned} H &= 4 \\ V &= 0 \\ D &= 4+4 \\ &\hline 12+1=13 \end{aligned}$$



- (a) 13  
(b) 15  
(c) 17  
(d) 19

$$\begin{aligned} H &= 7 \\ V &= 6 \\ D &= 0 \\ &\hline 13 \end{aligned}$$

Directions (Questions 5 to 29) : In each of the following questions, find the number of angles in the given figure.



(R.R.B. 2003)

- (a) 4  
(b) 5  
(c) 6  
(d) 7

6.



- (a) 5  
(b) 6  
(c) 8  
(d) 10

8.



Painted at all.

## EXERCISE 14B

- 4.1. A cube, painted yellow on all faces is cut into 27 small cubes of equal size. How many small cubes are painted on one face only?  $\frac{6}{27} = \frac{2}{9}$  (R.R.B. 2004)
- (a) 1  
(b) 6  
(c) 8  
(d) 12
- 4.2. All surfaces of a cube are coloured. If a number of smaller cubes are taken out from it, each side  $1/4$  the size of the original cube's side, indicate the number of cubes with only one side painted.  $6(n-2)^2 = 6(3-2)^2 = 6 \times 1 = 6$  (M.B.A. 2006)
- (a) 60.  
(b) 32  
(c) 24  
(d) 16
- 4.3. Directions : A cube is painted blue on all faces and is then cut into 125 cubes of equal size. Answer the following questions based on this statement.

- (1) How many cubes are not painted on any face?  $(n-2)^3 = (5-2)^3 = 3^3 = 27$  (Hotel Management, 2002)
- (a) 8  
(b) 16  
(c) 27  
(d) 36  
(e) 54
- (2) How many cubes are painted on one face only?  $6(n-2)^2 = 6(9) = 54$
- (a) 16  
(b) 32  
(c) 48  
(d) 54  
(e) 72
- 4.4. A cube of white material is painted black on all its surfaces. If it is cut into 125 smaller cubes of the same size, then how many cubes ...