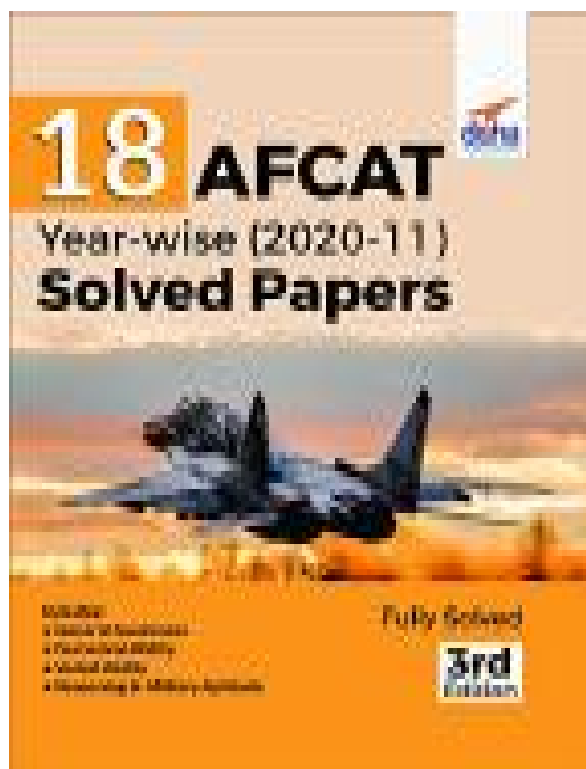


# AFCAT-1 Solved Paper 2019

*This Section is taken from the Book:*



**ISBN : 9789389986549**

This book is available at all leading physical book stores and online book stores.

To view complete books visit.



To download complete catalogue click  
**<https://amzn.to/2GXTMyA>** or visit QR.

# AIR FORCE COMMON ADMISSION TEST (AFCAT) I/2019

(Held on 16<sup>th</sup> Feb.- 2019) (Based on Memory)

## Instructions for candidates

TIME ALLOTTED – 2 HRS.

1. Total No. of Questions–100. Each Question is of three marks.
2. One mark will be deducted for every wrong answer.

## NUMERICAL ABILITY

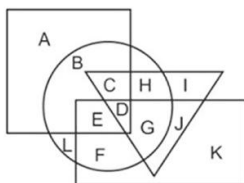
1. Car A is travelling at 60 kmph towards northwest creating an angle  $42^\circ$  to north and Car B is travelling towards South West at 80 kmph creating an angle  $48^\circ$  degree to South. Both are started from same point. Find distance between A and B after one hour?
  - (a) 100km
  - (b) 120km
  - (c) 150km
  - (d) 90km
2. Average age of  $n$  students who promoted in class VIII is  $Y$  years. Three more students included in class whose ages are  $Y-1$ ,  $Y-2$  and  $Y+3$  years. Find their average age when they promoted in class Xth.
  - (a)  $Y$
  - (b)  $Y-3$
  - (c)  $Y+2$
  - (d)  $Y+5$
3. Difference between two stations X and Y is 500 km one train starting from X move toward Y with 20 km/h and another train move toward X from Y with the speed 30km/h. What is the distance of the point where both train cross each other from point X.
  - (a) 400km
  - (b) 200km
  - (c) 300km
  - (d) 100km
4. The average monthly rainfall is 2.7inch, the average of first 7 months rainfall is 1.1 less than the average of yearly rainfall and rainfall of other four months is 20.3 what is the average rainfall of the last month?
  - (a) 0.9
  - (b) 10
  - (c) 2.1
  - (d) 1.3
5. X, Y and Z have some monkey in the ratio 4:3:8. If 2 monkey run away from X and 4 monkey run away Z than the ratio become 3:3:8 how many monkey they initially had?
  - (a) 10
  - (b) 20
  - (c) 40
  - (d) 30
6. A is 5 times efficient as of B. A completes a piece of work in 60 days less than B, how many time will they take individually?
  - (a) 15 days, 75 days
  - (b) 13 days, 65 days
  - (c) 15 days, 60 days
  - (d) 17 days, 85 days
7. A man bought watch and pen-drive at 1564 each. And one sold for 23% profit and other sold for 23% loss. What is overall profit or loss?
  - (a) 0%
  - (b) 23%
  - (c) 46%
  - (d) 0%
8. A and B earn in the ratio 2:1. They spend in the ratio 5:3 and save in the ratio 4:1. If the total monthly savings of both A and B are Rs. 5000, the monthly income of B is-
  - (a) Rs. 7,000
  - (b) Rs. 14,000
  - (c) Rs. 5,000
  - (d) Rs. 10,000
9. 240 men can finish a work in 20 days working 5 hours a day. To finish the work within 10 days working 8 hours a day, the minimum number of men required is-
  - (a) 310
  - (b) 300
  - (c) 315
  - (d) 312
10. While selling, a businessman allows 40% discount on the marked price and there is a loss of 30%. If it is sold at the marked price, profit per cent will be –
  - (a) 10%
  - (b) 20%
  - (c) 16.68%
  - (d) 16.25%
11. The average salary of all the staff in an office of a corporate house is Rs. 5,000. The average salary of the officers is Rs. 14,000 and that of the rest is Rs. 4,000. If the total number of staff is 500, the number of officers is–
  - (a) 10
  - (b) 15
  - (c) 25
  - (d) 50
12. 60% of the cost price of an article is equal to 50% of its selling price. Then the percentage of profit or loss on the cost price is-
  - (a) 20% loss
  - (b)  $16\frac{2}{3}\%$  profit
  - (c) 20% profit
  - (d) 10% loss
13. There are in all, 10 balls; some of them are red and the others white. The average cost of all balls is Rs. 28. If the average cost of red balls is Rs. 25 and that of white balls is Rs. 30, the number of white balls is:
  - (a) 3
  - (b) 5
  - (c) 6
  - (d) 7
14. Either 8 men or 17 women can paint a house in 33 days. The number of days required to paint three such houses by 12 men and 24 women working at the same rate is :
  - (a) 44
  - (b) 43
  - (c) 34
  - (d) 66

15. The difference between simple and compound interest on a sum of money at 5% p.a. for 2 years. is Rs. 100. The sum of money must be.
- (a) Rs. 35,000 (b) Rs. 41,000  
(c) Rs. 40,000 (d) Rs. 45,000
16. If  $\sqrt{2} = 1.4142$ , find the value of
- $$2\sqrt{2} \sqrt{2} \frac{1}{2+\sqrt{2}} \frac{1}{\sqrt{2}-2}$$
- (a) 1.4144 (b) 2.8284  
(c) 28.284 (d) 2.4142
17. An alloy contains copper, zinc and nickel in the ratio of 5 : 3 : 2. The quantity of nickel in kg that must be added to 100 kg of this alloy to have the new ratio 5 : 3 : 3 is
- (a) 8 (b) 10  
(c) 12 (d) 15
18. The ratio of the ages of Ram and Rahim 10 years ago was 1 : 3. The ratio of their ages five years hence will be 2 : 3. Then the ratio of their present ages is
- (a) 1 : 2 (b) 3 : 5  
(c) 3 : 4 (d) 2 : 5

### REASONING AND MILITARY APTITUDE TEST

**DIRECTIONS (Qs. 19–21) :** In each of the following questions, select the related letter/word/ figure/ number from the given alternatives.

19. Microphone : Loud :: Microscope : ?
- (a) Elongate (b) Investigate  
(c) Magnify (d) Examine
20. Sound : Medium :: Light : ?
- (a) Air (b) Vacuum  
(c) Water (d) Glass
21. Democracy : India :: Communism : ?
- (a) France (b) China  
(c) Britain (d) America
22. In the following figure, rectangle represents Opticians, circle represents Art critics, triangle represents Riders and square represents Boxes. Which set of letters represents Art critics who are not Riders?



- (a) BLEF (b) IJ  
(c) CHDG (d) EDGJ

**DIRECTIONS (Qs. 23-24) :** In the following question, select the related word pair from the given alternatives.

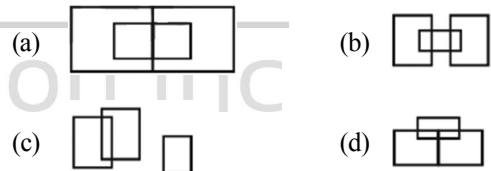
23. School : Education :: ? : ?
- (a) Scalpel : Teacher (b) Hospital : Treatment  
(c) Teacher : School (d) Class : College
24. 5 : 125 :: 7 : ?
- (a) 343 (b) 512  
(c) 243 (d) 729

**DIRECTIONS (Qs. 25-26) :** In the following question, select the one which is different from the other three responses.

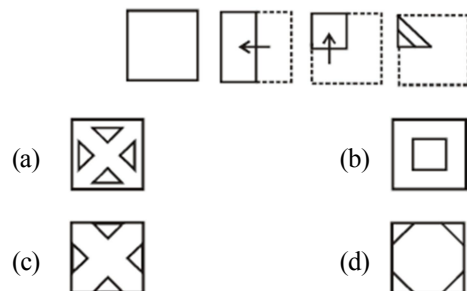
25. (a) Daring : Timid (b) Beautiful : Pretty  
(c) Clear : Vague (d) Youth : Adult
26. (a) Fish : Shoal (b) Cow : Herd  
(c) Sheep : Flock (d) Man : Mob

**DIRECTIONS (Qs. 27-29) :** For the following questions Find the odd word / letter / number from the given alternative.

27. (a) Rival (b) Opponent  
(c) Foe (d) Ally
28. (a) POCG (b) KLIZ  
(c) BUDX (d) FQMV
29. (a) Farmer (b) Blacksmith  
(c) Cobbler (d) Helper
30. Which one of the following diagram represents the correct relationship among Professor, Male and Female.



31. A's birthday is on Friday 30th June. Find the day of the week on which B's birthday in the same year if B was born 15<sup>th</sup> November ?
- (a) Tuesday (b) Wednesday  
(c) Monday (d) Sunday
32. A piece of paper is folded and cut. From the figures given, indicate how it will appear when opened



33. Which answer figure will complete the pattern in the following question figure?



- (a) (b)   
(c) (d)

34. Which one of the following diagram represents the correct relationship among

Pink, Blue and Fruit.

- (a) (b)   
(c) (d)

35. Which one of the following diagram represents the correct relationship among

Brain, Cerebrum, Liver and Human body.

- (a) (b)   
(c) (d)

36. Which figure completes the statement?



Is to as

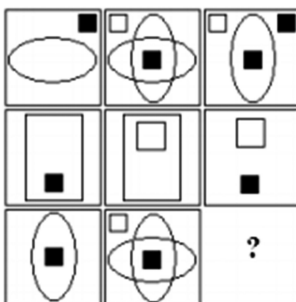


is to



- (a) (b)   
(c) (d)

37. Look at the patterns in the squares and understand their relationship to one another so as to fill in the square with missing symbols.



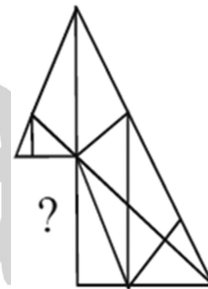
- (a) (b)   
(c) (d)

38. Replace '?' by the appropriate figure from the given options.



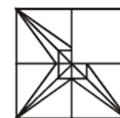
- (a) (b)   
(c) (d)

39. Which answer figure will complete the question figure?



- (a) (b)   
(c) (d)

40. Which answer figure will complete the question figure?



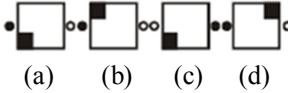
- (a) (b)   
(c) (d)

**DIRECTIONS (Qs. 41-43) :** Complete the series of figures, by selecting correct answer figure from the given responses.

41. **Question Figures:**



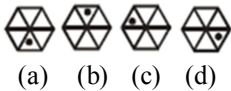
**Answer Figures:**



42. **Question Figures:**



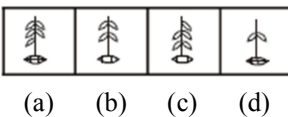
**Answer Figures:**



43. **Question Figures:**



**Answer Figures:**

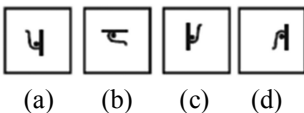


**DIRECTIONS (Qs. 44-46) :** Choose a right figure from the set of answer figures which would replace the question mark (?)

44. **Question Figures:**



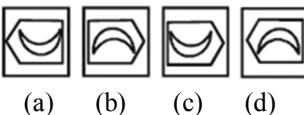
**Answer Figures:**



45. **Question Figures:**



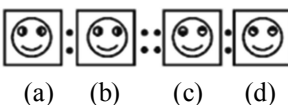
**Answer Figures:**



46. **Question Figures:**



**Answer Figures:**



**DIRECTIONS (Qs. 47-48) :** In each question below are given some statements followed by two conclusions numbered I and II. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows/follow from the given statements, disregarding commonly known facts.

**Give answer**

- (a) If only conclusion I follows.
- (b) If only conclusion II follows.
- (c) If either conclusion I or II follows.
- (d) If neither conclusion I nor II follows.

47. **Statements:**

All shirts are skirts.

No skirt is top.

All tops are kurta.

**Conclusions:**

- I All shirts are kurta
- II Some kurta are skirts.

48. **Statements:**

All September are October.

No October is November.

No November is December.

**Conclusions:**

- I Some September are not Novembers
- II No October is December.

**DIRECTIONS (Qs. 49-50) :** In each of the following questions, you are given a figure (X) followed by four alternative figures (1), (2), (3) and (4) such that figure (X) is embedded in one of them. Trace out the alternative figure which contains fig. (X) as its part.

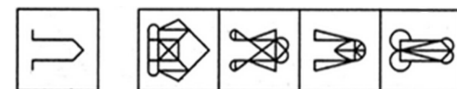
49. Find out the alternative figure which contains figure (X) as its part.



(X) (1) (2) (3) (4)

- (a) 1 (b) 2
- (c) 3 (d) 4

50. Find out the alternative figure which contains figure (X) as its part.



(X) (1) (2) (3) (4)

- (a) 1 (b) 2
- (c) 3 (d) 4

# **VERBAL ABILITY**

**DIRECTIONS (Qs. 51-53):** Out of the four alternatives, choose the one which best expresses the meaning of the given word.

51. **POLTROON**  
 (a) Pusillanimous (b) Gallant  
 (c) Gutsy (d) Wearied
52. **ROSTRUM**  
 (a) Guardian (b) Podium  
 (c) Device (d) Scheme
53. **PROROGUE**  
 (a) Adjourn (b) Convene  
 (c) Rally (d) Continue

**DIRECTIONS (Qs. 54-56):** In the following questions, choose the word opposite in meaning to the given word.

54. **LUCRE**  
 (a) Debt (b) Elegance  
 (c) Outlaw (d) Sissy
55. **RABBLE**  
 (a) Rag (b) Nobility  
 (c) Scanty (d) Sanction
56. **COTERIE**  
 (a) Loner (b) Socialize  
 (c) Elite (d) Indecent

**DIRECTIONS (Qs. 57-60):** In the following question, some part of the sentence may have errors. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.

57. It was being hard to believe (A)/that my brother could be (B)/involved in anything so sinister. (C)/No error(D)  
 (a) A (b) C  
 (c) C (d) D
58. The average age at which (A)/people die of heart diseases (B)/are decreasing. (C)/No error (D)  
 (a) A (b) B  
 (c) C (d) D
59. Hardly had I stepped (A)/out of my house when (B)/I saw them coming towards my house. (C)/No error(D)  
 (a) A (b) B  
 (c) C (d) D
60. The last Mughal emperor was (A)/send into exile (B)/by the British. (C)/ No error (D).  
 (a) A (b) B  
 (c) C (d) D

**DIRECTIONS (Qs. 61-63):** Read the passage carefully and choose the best answer to each question out of the four alternatives.

In the world have we made health an end in itself? We have forgotten that health is really a means to enable a person to do his work and do it well. A lot of modern medicine is concerned with promotion of good health. Many patients as well as many physicians pay very little attention to health; but very much attention to health makes some people imagine that they are ill. Our great concern with health is shown by the medical columns in newspaper, the health articles in popular magazines and the popularity of the Television programme and all those books on medicine we talk about health all the time. Yet for the most only result is more people with imaginary illnesses. The healthy man should not be wasting any time talking about health, he should be using health for work, the work he does and the work that good health makes possible.

61. Modern medicine is primarily concerned with:

- (a) promotion of good health  
 (b) people suffering from imaginary illnesses  
 (c) people suffering from real illnesses  
 (d) increased efficiency in work

62. A healthy man should be concerned with:

- (a) his work which good health makes possible  
 (b) looking after his health  
 (c) his health which makes work possible  
 (d) talking about health

63. Our great concern with health is shown by?

- (a) free medicine distribution in hospitals  
 (b) free education to medical students  
 (c) taking yoga classes  
 (d) the health articles in popular magazines

**DIRECTIONS (Qs. 64-67):** In the following questions four alternatives are given for idioms/phrases in now. Choose the one that best expresses the meaning of the given idiom/phrase.

64. **Brain sauce**  
 (a) Foolish (b) Wisdom  
 (c) Mentally ill (d) Head full of thoughts
65. **Lynch law**  
 (a) Law imposed by the government  
 (b) Law of the mob  
 (c) A law that is supposed to be useless  
 (d) A rule that no one follows
66. **Globetrotters**  
 (a) Travellers around the world  
 (b) Sick people in hospital  
 (c) The people living in asylum  
 (d) World champions
67. **Dole out**  
 (a) Allocate (b) Be effective  
 (c) Turn up (d) Mismanage



**DIRECTIONS (Qs. 68-70) :** In the following passage some of the words have been left out. Read the passage carefully and select the correct answer for the given blank out of the four alternatives.

Some scholars, while exploring the forests of America, discovered some buildings that were in ruins. These buildings were (68)\_\_\_\_\_ ruined by encroaching forest. They were remnants of a (69)\_\_\_\_\_ civilization. The scholars got interested. They excavated more and discovered (70)\_\_\_\_\_ their utmost surprise the remains of a flourishing civilization-the Mayas as they named it.

68. (a) reasonably (b) surely  
(c) apparently (d) perfectly  
69. (a) great (b) invisible  
(c) static (d) ordinary  
70. (a) at (b) for  
(c) by (d) to

**DIRECTIONS (Qs. 71-75) :** In the following questions, sentences are given with blanks to be filled in with an appropriate word(s). Four alternatives are suggested for each question. Choose the correct alternative out of the four as your answer.

71. Grandmother has a good memory, she can remember things which \_\_\_\_\_ many years ago.  
(a) had happened (b) have happened  
(c) happened (d) happens to be  
72. I \_\_\_\_\_ her among the crowd just now.  
(a) have glimpsed (b) had glimpsed  
(c) have been glimpsing (d) glimpsed  
73. Lost time is \_\_\_\_\_ again, and what we call time enough always proves little enough.  
(a) found never (b) find never  
(c) never found (d) never been found  
74. To such a degree \_\_\_\_\_ that people rebuked him.  
(a) he made a noise (b) did he make a noise  
(c) he had made a noise (d) did he make noise  
75. I'm going to adopt her as \_\_\_\_\_ as Julie and I get married.  
(a) sooner (b) quickly  
(c) earlier (d) soon

#### GENERAL AWARENESS

76. In  $4 \times 100$  m race, which nation holds the record?  
(a) Nigeria (b) USA  
(c) Kenya (d) Jamaica  
77. Which Continent has the largest coastline?  
(a) Asia (b) North America  
(c) South America (d) Africa

78. Which game is Geet Sethi associated with?  
(a) Squash (b) Table Tennis  
(c) Billiards (d) Golf  
79. In which state of India "Than Ta Dance" is related?  
(a) Meghalaya (b) Manipur  
(c) Assam (d) Sikkim  
80. When our Constitution was adopted?  
(a) 26 November 1949 (b) 26 January 1949  
(c) 26 January 1950 (d) 26 November 1950  
81. The Hardest substance on the Earth?  
(a) Iron (b) Silver  
(c) Diamond (d) Lead  
82. The language of Ashoka's Inscription?  
(a) Sanskrit (b) Tamil  
(c) Prakrit (d) Parthian  
83. Who was awarded first Bharat Ratana?  
(a) M. Visvesvaraya  
(b) Sarvepalli Radhakrishnan  
(c) Govind Ballabh Pant  
(d) Rajendra Prasad  
84. The first Modern Olympic held where and which city?  
(a) France (b) Britain  
(c) Cuba (d) Greece  
85. Oldest Mountain range in India?  
(a) Himalaya (b) Aravali  
(c) Satpura (d) Nilgiri  
86. Number of Players in Basket Ball?  
(a) 11 (b) 9  
(c) 7 (d) 5  
87. Shuddhi Movement was run by?  
(a) Arya Samaj (b) Brahmo Samaj  
(c) Prarthana Samaj (d) None of these  
88. ISRO's Satish Bahwan Space Center is located at which place?  
(a) Andhra Pradesh (b) Telangana  
(c) Tamil Nadu (d) Odisha  
89. The Author of the book "The Golden Threshold"?  
(a) R.K Narayan (b) Sarojini Naidu  
(c) Jhumpa Lahiri (d) Arundhati Roy  
90. The founder of Stavahana Dynasty?  
(a) Satakarni (b) Simuka  
(c) Pulumavi (d) Kanha  
91. Who is the Father of the Indian Space Program?  
(a) Vikram Ambalal Sarabhai (b) A. P. J. Abdul Kalam  
(c) Homi Jehangir Bhabha (d) Satyendra Nath Bose

92. Uber cup is related to which sport?  
(a) Cricket (b) Badminton  
(c) Football (d) Tennis
93. Who is the youngest grandmaster in India?  
(a) Parimarjan Negi (b) D. Gukesh  
(c) Krishnan Sasikiran (d) Surya Shekhar
94. From which country India bought C-17 transport aircraft?  
(a) Iran (b) France  
(c) USA (d) Germany
95. Asian games maximum number of times?  
(a) Japan (b) China  
(c) Thailand (d) India
96. Agra city was founded by -  
(a) Sikandar Lodhi (b) Babar  
(c) Akbar (d) Shah Jahan
97. The visible part of the sun is called –  
(a) Chromosphere (b) Photosphere  
(c) Corona (d) Core
98. Ozone layer located in which layer -  
(a) Stratosphere (b) Troposphere  
(c) Mesosphere (d) Exosphere
99. Who is the chairman of the constitution drafting committee–  
(a) Alladi Krishnaswami Ayyar  
(b) N. Gopalaswami  
(c) B.R. Ambedkar  
(d) K.M Munshi
100. UN was established on?  
(a) 1944 (b) 1945  
(c) 1942 (d) 1946

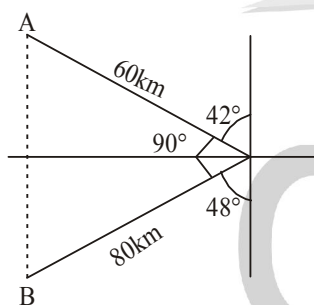


## ANSWER KEY

1	(a)	11	(d)	21	(b)	31	(b)	41	(c)	51	(a)	61	(a)	71	(c)	81	(c)	91	(a)
2	(c)	12	(c)	22	(a)	32	(c)	42	(d)	52	(b)	62	(a)	72	(d)	82	(c)	92	(b)
3	(b)	13	(c)	23	(b)	33	(c)	43	(c)	53	(a)	63	(d)	73	(c)	83	(c)	93	(b)
4	(a)	14	(c)	24	(a)	34	(d)	44	(b)	54	(a)	64	(b)	74	(b)	84	(d)	94	(c)
5	(d)	15	(c)	25	(b)	35	(d)	45	(d)	55	(b)	65	(b)	75	(d)	85	(b)	95	(a)
6	(a)	16	(b)	26	(d)	36	(b)	46	(d)	56	(a)	66	(a)	76	(d)	86	(d)	96	(b)
7	(d)	17	(b)	27	(d)	37	(a)	47	(d)	57	(a)	67	(a)	77	(a)	87	(a)	97	(b)
8	(a)	18	(b)	28	(d)	38	(c)	48	(a)	58	(c)	68	(c)	78	(c)	88	(a)	98	(a)
9	(b)	19	(c)	29	(d)	39	(c)	49	(d)	59	(d)	69	(a)	79	(b)	89	(b)	99	(c)
10	(c)	20	(b)	30	(a)	40	(b)	50	(b)	60	(b)	70	(d)	80	(a)	90	(b)	100	(b)

## HINTS & SOLUTIONS

1. (a)



Distance travelled by A in one hour = 60 km

Distance travelled by B in one hour = 80 km

Angle between them = 90

Using Pythagoras theorem.

$$\begin{aligned} \text{Distance between A \& B after one hour} &= \sqrt{60^2 + 80^2} \\ &= \sqrt{3600 + 6400} \\ &= \sqrt{10000} \\ &= 100 \text{ km.} \end{aligned}$$

2. (c) Total age of students who promoted in class VIII is = n. Y years.

When 3 more students included this college.

$$= n.Y + Y - 1 + Y - 2 + Y + 3$$

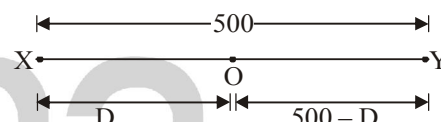
$$= ny + 3y$$

After two years when they are in X<sup>th</sup> total age

$$= n(Y + 2) + 3(Y + 2)$$

$$\text{Avg age} = \frac{n Y + 2 + 3 Y + 2}{n + 3}$$

3. (b)



Suppose they meet at point 'O' at the same time

$$\text{Time} = \frac{D}{20} = \frac{500 - D}{30}$$

$$\Rightarrow 30D = (500 - D) \times 20$$

$$\Rightarrow 50D = 500 \times 20$$

$$D = 200 \text{ km}$$

Both the train meet 200 km from point 'X'.

4. (a) Total Rain fall of 12 months = 2.7 × 12 = 32.4

$$\text{Total Rain fall of first 7 months} = 7 \times (2.7 - 1.1) = 11.2$$

Rain fall of last month

$$= 32.4 - (11.2 + 20.3)$$

$$= 32.4 - 31.5$$

$$= 0.9$$

5. (d) X : Y : Z  
4 : 3 : 8

$$\frac{4k - 2}{3k} = \frac{3}{3}$$

$$4k - 2 = 3k$$

$$k = 2$$

$$\text{Initially monkey} = (4 + 3 + 8)k = 15k = 15 \times 2 = 30$$

6. (a) According to question,

	A	:	B
Efficiency	5	:	1
Time	1	:	5

$$5x - x = 60$$

$$4x = 60$$

$$x = 15$$

Time take by A = 15 days

$$B = 75 \text{ days}$$

7. (d)  $CP = 1564 + 1564 = 3128$

$$SP = \frac{1564 \times 123}{100} - \frac{1564 \times 77}{100}$$

$$\frac{1564 \times 200}{100} = 3128$$

$$CP = S.P$$

So, no profit no loss.

8. (a) Let the monthly income of B be Rs. x.

Then, Monthly income of A = Rs. 2x and

Saving of A =  $5000 \times 4/(4+1)$

$$= \text{Rs. } 4000$$

Saving of B = Rs. 1000

Now, we have

$$(2x - 4000)/(x - 1000) = 5/3$$

$$\Rightarrow 6x - 12000 = 5x - 5000$$

$$x = \text{Rs. } 7000$$

So, Monthly income of B = 7000

9. (b)  $M_1 D_1 H_1 = M_2 D_2 H_2$

$$\text{Required no. of men} = (240 \times 5 \times 20)/(8 \times 10)$$

$$= 300$$

10. (c) Let the M.P. be Rs. 100.

$$\text{We know } S.P = (100 - 40) = \text{Rs. } 60$$

$$\text{and } C.P. = 60 \times 100/(100 - 30) = \text{Rs. } 600/7 = 85.7$$

$$\text{So, Required \% profit} = (100 - 85.7)/85.7 \times 100$$

$$= 14.3/85.7 \times 100 = 16.68\%$$

11. (d) Let the number of officers be x.

$$\therefore 5000 \times 500 = 14000x + 4000(500 - x)$$

$$\therefore 2500000 = 14000x + 2000000 - 4000x$$

$$\therefore x = 500000/10000 = 50$$

12. (c) Let the cost price be Rs. 100.

$$\therefore S.P \times 50/100 = 100 \times (60/100)$$

$$\therefore S.P = (60 \times 100)/50$$

$$= \text{Rs. } 120$$

$$\therefore \text{Required \% profit} = (120 - 100)/100 \times 100 = 20\%$$

13. (c) Let the number of white balls be x.

$$\therefore \text{Number of red balls} = (10 - x)$$

$$\therefore 10 \times 28 = x \times 30 + 25(10 - x)$$

$$\Rightarrow 280 = 30x + 250 - 25x$$

$$= 280 = 5x + 250$$

$$\Rightarrow 5x = 280 - 250 = 30$$

$$\Rightarrow x = 6$$

So, The number of white balls = 6

14. (c)  $\therefore 8 \text{ men} = 17 \text{ women}$

$$\Rightarrow 12 \text{ men} \equiv \frac{17}{8} \times 12 = \frac{51}{2} \text{ women}$$

$$\therefore 12 \text{ men} + 24 \text{ women}$$

$$\frac{51}{2} + 24 = \frac{99}{2} \text{ women}$$

$$\text{By } \frac{M_1 D_1}{W_1} = \frac{M_2 D_2}{W_2}$$

$$\Rightarrow \frac{17 \times 33}{1} = \frac{99 \times D_2}{2 \times 3}$$

$$D_2 = \frac{17 \times 33 \times 6}{99} = 34 \text{ days}$$

15. (c)  $\text{Difference} = \frac{Pr^2}{100^2}$

$$\Rightarrow 100 = \frac{P \times 5 \times 5}{100 \times 100}$$

$$\Rightarrow \frac{P}{400} = 100$$

$$\Rightarrow P = \text{Rs. } 40000$$

16. (b) Expression:

$$2\sqrt{2} - \sqrt{2} \cdot \frac{1}{2+\sqrt{2}} \cdot \frac{1}{\sqrt{2}-2}$$

$$2\sqrt{2} - \sqrt{2} \left( \frac{1}{2+\sqrt{2}} \cdot \frac{1}{\sqrt{2}-2} \right)$$

$$2\sqrt{2} - \sqrt{2} \left( \frac{-2 - \sqrt{2}}{2+\sqrt{2}} \cdot \frac{2 - \sqrt{2}}{\sqrt{2}-2} \right)$$

$$2\sqrt{2} \quad \sqrt{2} \quad \frac{2\sqrt{2}}{2-4}$$

$$2\sqrt{2} \quad \sqrt{2} - \sqrt{2} \quad 2\sqrt{2}$$

$$= 2 \times 1.4142 = 2.8284$$

17. (b) Let x kg of nickel be mixed.

$$\therefore \frac{20}{100} \times \frac{x}{x} = \frac{3}{11}$$

$$\Rightarrow 220 + 11x = 300 + 3x$$

$$\Rightarrow 11x - 3x = 300 - 220$$

$$\Rightarrow 8x = 80$$

$$\Rightarrow x = 10 \text{ kg}$$

18. (b) Let the ages of Ram and Rahim 10 years ago be x and 3x years respectively.

After 5 years from now,

$$\Rightarrow \frac{x}{3x} = \frac{15}{15} \quad \frac{2}{3}$$

$$\Rightarrow 6x = 30 \quad 3x = 45$$

$$\Rightarrow 3x = 45 - 30 \Rightarrow 3x = 15$$

$$\Rightarrow x = 5$$

\therefore \text{Ratio of their present ages}

$$= (x + 10) : (3x + 10)$$

$$= 15 : 25 = 3 : 5$$

19. (c) As, Microphone makes sound louder. Similarly, Microscope makes the object magnified.

20. (b) Sound requires medium to travel and light can travel in vacuum.

21. (b) Country and its type of governance.

22. (a) B L E F

23. (b) We get education in school, Similarly Treatment is done in hospital.

24. (a)  $5^3 = 125$

$$7^3 = 343$$

25. (b) In all other pairs, the two words are antonyms of each other.

26. (d) In all other pairs, second is a collective group of the first.

27. (d) Ally is different in nature.

28. (d) FQMV is different because there is no vowel in word.

29. (d) Helper may be of any profession.

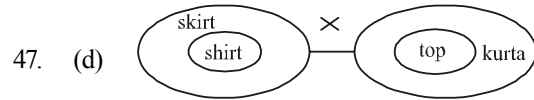
31. (b) According to question,

$$\text{Required day} = (31 + 31 + 30 + 31 + 15) \div 7 = 5 \text{ days}$$

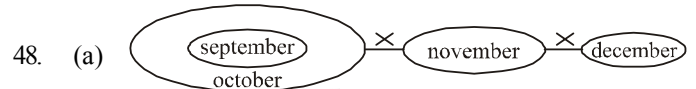
Hence, B's birthday was on 5 days later of A's birthday

Hence, Wednesday is the required day.

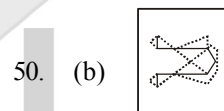
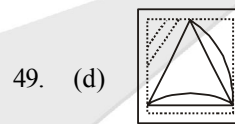
38. (c) Similar figure reappears in every fourth step and each time a figure reappears, it rotates through  $90^\circ$  ACW.



So neither conclusion I nor II follows.



So only conclusion I follows.



51. (a) Poltroon: having or showing a shameful lack of courage.

Pusillanimous: showing a lack of courage or determination; timid.

Gutsy: having or showing courage, determination, and spirit.

Hence Poltroon and Pusillanimous are synonyms to each other.

52. (b) Rostrum: a level usually raised surface.

Podium: a small platform on which a person may stand to be seen by an audience.

Hence Rostrum and Podium are synonyms to each other.

53. (a) Prorogue: to bring to a formal close for a period of time.

Adjourn: break off (a meeting, legal case, or game) with the intention of resuming it later.

Convene: come or bring together for a meeting or activity.

Hence Prorogue and Adjourn are synonyms to each other.

54. (a) Lucre: monetary gain.

Debt: a sum of money that is owed or due.

Outlaw: a person who has broken the law.

Sissy: a person regarded as effeminate or cowardly.

Hence 'Debt' is the correct antonym.

55. (b) Rabble: a disorderly crowd; a mob.  
Nobility: the quality of being noble in character; integrity.  
Hence 'Nobility' is the correct antonym.
56. (a) Coterie: a small group of people with shared interests or tastes, especially one that is exclusive of other people.  
Loner: a person that prefers not to associate with others.  
Hence 'Loner' is the correct antonym.
57. (a) "Being" should be removed because two forms of "be" in a complement should not be used.
58. (c) When we talk about "age" and if we need to talk about the context related to lessening, the word "reduce" should be used.
59. (d) No Error
60. (b) As the sentence is in passive and in passive voice structured sentence, we use "be + v3" and the 3rd form of "send" is "sent" thus "sent" should be used in place of "send".
61. (a) Refer to, "A lot of modern medicine is concerned with promotion of good health."
62. (a) Refer to, "The healthy man should not be wasting any time talking about health, he should be using health for work, the work he does and the work that good health makes possible."
63. (d) Refer to, "Our great concern with health is shown by the medical columns in newspaper, the health articles in popular magazines and the popularity of the Television programme and all those books on medicine we talk about health all the time".
71. (c) Subject + V2(past form of verb)+ Object.....+ ago.
72. (d) When 'just now' means a very short time ago. It takes past form of the verb i.e. V2.
73. (c) 'Never', 'Seldom', 'Always' are used before the 'Main verb'. Also the sentence is in 'passive voice'. Hence option C is the correct choice.
74. (b) Sentences beginning with 'To such a point, 'To such a degree', 'To such an extent' take inversion form i.e. "To such a degree + H.V. (auxiliary) + Subject + M.V." Moreover 'make a noise' is the correct idiomatic expression not 'make noise'.
75. (d) Soon means 'a short time after then' i.e. in or after a short time.  
Early means 'near the beginning of a period of time we are talking about'. Early does not mean soon. Moreover, comparative degree is not needed.
- While we use quickly to refer to the speed with which something is done.  
Hence option D is the correct choice.
77. (a) Asia, the largest continent, stretches from the eastern Mediterranean Sea to the western Pacific Ocean. There are more than 40 countries in Asia. Some are among the most-populated countries in the world, including China, India, and Indonesia.
82. (c) Prakrit, Greek, and Aramaic
83. (c) Rajagopalachari, Sarvepalli Radhakrishnan, C. V. Raman were awarded the Bharat Ratna Award in the year 1954, after the effect of the constitution.
84. (d) In 1896, the first modern Olympic was played in Athens, Greece.
85. (b) The Aravalli Range is the oldest range of fold mountains in India. The estimated age of Aravalli Range according to geologists is about 350 million years. As for now the Aravalli Range of mountains is approximately 692 km in the north-west part of India. It starts from Delhi and pass through southern Haryana and across the states of Rajasthan which ends in Gujarat.
86. (d) Basketball is a team sport in which two teams, most commonly of five players each, opposing one another on a rectangular court. The only major sport strictly of U.S. origin, basketball was invented by James Naismith (1861–1939) on or about December 1, 1891.
87. (a) Arya samaj was founded by the sannyasi Dayanand Saraswati on 10 April 1875. Members of the Arya Samaj believe in one God and reject the worship of idols. It is an Indian Hindu reform movement.
88. (a) Sriharikota is a barrier island off the Bay of Bengal coast located in the Nellore district of Andhra Pradesh, India. It houses the Satish Dhawan Space Centre, one of the two satellite launch centres in India.
90. (b) Simuka was an Indian king belonging to the Satavahana dynasty. He is mentioned as the first king in a list of royals in a Satavahana inscription at Nanaghat.
91. (a) Vikram Ambalal Sarabhai was an Indian scientist and innovator widely regarded as the father of India's space programme. Sarabhai received the Shanti Swarup Bhatnagar Medal in 1962. The nation honoured him by awarding Padma Bhushan in 1966 and Padma Vibhushan in 1972.
93. (b) As per the latest data of the World Chess Federation; D. Gukesh has become India's youngest Grandmasters at 12 years, 7 months and 17 days with this achievement, Gukesh has overtaken Praggnanandhaa who held the record at 12 years and 10 months in June 2018.

96. (a) Modern Agra was founded by Sikandar Lodhi in the 16th century. Emperor Akbar built the Agra fort and Fatehpur Sikri near Agra.
97. (b) The boundary between the Sun's interior and the solar atmosphere is called the photosphere. It is what we see as the visible "surface" of the Sun.
98. (a) Stratosphere extends upwards from the tropopause to about 50 km. It contains much of the ozone in the atmosphere. The increase in temperature with height occurs because of absorption of ultraviolet (UV) radiation from the sun by this ozone.
99. (c) The Drafting Committee had seven members: Alladi Krishnaswami Ayyar, N. Gopalaswami; B.R. Ambedkar, K.M Munshi, Mohammad Saadulla, B.L. Mitter and D.P. Khaitan. At its first meeting on 30th August 1947, the Drafting Committee elected B.R Ambedkar as its Chairman.

