

Company: 3i Infotech

Sample Placement Question Paper - 1

Aptitude Questions

1. If $2x-y=4$ then $6x-3y=?$
(a)15 (b)12 (c)18 (d)10 Ans. (b)
2. If $x=y=2z$ and $xyz=256$ then what is the value of x ? (a)12 (b)8 (c)16
(d)6 Ans. (b)
3. $(1/10)^{18} - (1/10)^{20} = ?$
(a) $99/1020$ (b) $99/10$ (c) 0.9 (d) none of these Ans. (a)
4. Pipe A can fill in 20 minutes and Pipe B in 30 mins and Pipe C can empty the same in 40 mins.If all of them work together, find the time taken to fill the tank
(a) $17 \frac{1}{7}$ mins (b) 20 mins (c) 8 mins (d) none of these Ans. (a)
5. Thirty men take 20 days to complete a job working 9 hours a day.How many hour a day should 40 men work to complete the job?
(a) 8 hrs (b) $7 \frac{1}{2}$ hrs (c) 7 hrs (d) 9 hrs Ans. (b)
6. . Find the smallest number in a GP whose sum is 38 and product 1728
(a) 12 (b) 20 (c) 8 (d) none of these Ans. (c)
7. A boat travels 20 kms upstream in 6 hrs and 18 kms downstream in 4 hrs.Find the speed of the boat in still water and the speed of the water current?
(a) $\frac{1}{2}$ kmph (b) $\frac{7}{12}$ kmph (c) 5 kmph (d) none of these Ans. (b)
8. A goat is tied to one corner of a square plot of side 12m by a rope 7m long.Find the area it can graze?
(a) 38.5 sq.m (b) 155 sq.m (c) 144 sq.m (d) 19.25 sq.mAns. (a)
9. Mr. Shah decided to walk down the escalator of a tube station. He found that if he walks down 26 steps, he requires 30 seconds to reach the bottom. However, if he steps down 34 stairs he would only require 18 seconds to get to the bottom. If the time is measured from the moment the top step begins to descend to the time he steps off the last step at the bottom, find out the height of the stair way in steps?
Ans.46 steps.
- 10.The average age of 10 members of a committee is the same as it was 4 years ago, because an old member has been replaced by a young member. Find how much younger is the new member ?
Ans.40 years.
- 11.Three containers A, B and C have volumes a, b, and c respectively; and container A is full of water while the other two are empty. If from container A water is poured into container B which becomes $\frac{1}{3}$ full, and into container C which becomes $\frac{1}{2}$ full, how much water is left in container A?
- 12.ABCE is an isosceles trapezoid and ACDE is a rectangle. $AB = 10$ and $EC = 20$. What is the length of AE?
Ans. $AE = 10$

13. In the given figure, PA and PB are tangents to the circle at A and B respectively and the chord BC is parallel to tangent PA. If $AC = 6$ cm, and length of the tangent AP is 9 cm, then what is the length of the chord BC? Ans. $BC = 4$ cm.
14. Three cards are drawn at random from an ordinary pack of cards. Find the probability that they will consist of a king, a queen and an ace. Ans. $64/2210$
15. A number of cats got together and decided to kill between them 999919 mice. Every cat killed an equal number of mice. Each cat killed more mice than there were cats. How many cats do you think there were? Ans. 991.
16. If $\log_2 x - 5 \log x + 6 = 0$, then what would the value / values of x be?
Ans. $x = e^2$ or e^3 .
17. In June a baseball team that played 60 games had won 30% of its game played. After a phenomenal winning streak this team raised its average to 50%. How many games must the team have won in a row to attain this average?
A. 12 B. 20 C. 24 D. 30 (Ans. C)
18. Can you tender a one rupee note in such a manner that there shall be total 50 coins but none of them would be 2 paise coins.? Ans. 45 one paise coins, 2 five paise coins, 2 ten paise coins, and 1 twenty-five paise coins.
19. A monkey starts climbing up a tree 20ft. tall. Each hour, it hops 3ft. and slips back 2ft. How much time would it take the monkey to reach the top? Ans. 18 hours.
20. What is the missing number in this series? 8 2 14 6 11 ? 14 6 18 12 Ans. 9
21. A certain type of mixture is prepared by mixing brand A at Rs.9 a kg. with brand B at Rs.4 a kg. If the mixture is worth Rs.7 a kg., how many kgs. of brand A are needed to make 40kgs. of the mixture? Ans. Brand A needed is 24kgs.
22. A wizard named Nepo says "I am only three times my son's age. My father is 40 years more than twice my age. Together the three of us are a mere 1240 years old." How old is Nepo?
Ans. 360 years old.
23. One dog tells the other that there are two dogs in front of me. The other one also shouts that he too had two behind him. How many are they? Ans. Three
24. A man ate 100 bananas in five days, each day eating 6 more than the previous day. How many bananas did he eat on the first day? Ans. Eight.
25. If it takes five minutes to boil one egg, how long will it take to boil four eggs?
Ans. Five minutes.
26. The minute hand of a clock overtakes the hour hand at intervals of 64 minutes of correct time. How much a day does the clock gain or lose? Ans. $32 \frac{8}{11}$ minutes.
27. Solve for x and y: $\frac{1}{x} - \frac{1}{y} = \frac{1}{3}$, $\frac{1}{x^2} + \frac{1}{y^2} = \frac{5}{9}$. Ans. $x = \frac{3}{2}$ or -3 and $y = 3$ or $-\frac{3}{2}$.
28. Daal is now being sold at Rs. 20 a kg. During last month its rate was Rs. 16 per kg. By how much percent should a family reduce its consumption so as to keep the expenditure fixed?
Ans. 20 %.
29. Find the least value of $3x + 4y$ if $x^2y^3 = 6$. Ans. 10.

30. Can you find out what day of the week was January 12, 1979? Ans. Friday.
31. A garrison of 3300 men has provisions for 32 days, when given at a rate of 850 grams per head. At the end of 7 days a reinforcement arrives and it was found that now the provisions will last 8 days less, when given at the rate of 825 grams per head. How many more men can it feed? Ans. 1700 men.
32. From 5 different green balls, four different blue balls and three different red balls, how many combinations of balls can be chosen taking at least one green and one blue ball?
33. Three pipes, A, B, & C are attached to a tank. A & B can fill it in 20 & 30 minutes respectively while C can empty it in 15 minutes. If A, B & C are kept open successively for 1 minute each, how soon will the tank be filled? Ans. 167 minutes.
34. A person walking $\frac{5}{6}$ of his usual rate is 40 minutes late. What is his usual time? Ans. 3 hours 20 minutes.
35. For a motorist there are three ways going from City A to City C. By way of bridge the distance is 20 miles and toll is \$0.75. A tunnel between the two cities is a distance of 10 miles and toll is \$1.00 for the vehicle and driver and \$0.10 for each passenger. A two-lane highway without toll goes east for 30 miles to city B and then 20 miles in a northwest direction to City C.
- Which is the shortest route from B to C
 - Directly on toll free highway to City C
 - The bridge
 - The Tunnel
 - The bridge or the tunnel
 - The bridge only if traffic is heavy on the toll free highway
 Ans. (a)
 - The most economical way of going from City A to City B, in terms of toll and distance is to use the
 - tunnel
 - bridge
 - bridge or tunnel
 - toll free highway
 - bridge and highway
 Ans. (a)
 - Jim usually drives alone from City C to City A every working day. His firm deducts a percentage of employee pay for lateness. Which factor would most influence his choice of the bridge or the tunnel?
 - Whether his wife goes with him
 - scenic beauty on the route
 - Traffic conditions on the road, bridge and tunnel
 - saving \$0.25 in tolls
 - price of gasoline consumed in covering additional 10 miles on the bridge
 Ans. (a)
 - In choosing between the use of the bridge and the tunnel the chief factor(s) would be:
 - Traffic and road conditions
 - Number of passengers in the car
 - Location of one's homes in the center or outskirts of one of the cities
 - Desire to save \$0.25
 - I only
 - II only
 - II and III only
 - III and IV only
 - I and II only
 Ans. (a)
36. The letters A, B, C, D, E, F and G, not necessarily in that order, stand for seven consecutive integers from 1 to 10, D is 3 less than A, B is the middle term F is as much less than B as C is greater than D, G is greater than F,

1. The fifth integer is
(a) A (b) C (c) D (d) E (e) F Ans. (a)
2. A is as much greater than F as which integer is less than G
(a) A (b) B (c) C (d) D (e) E Ans. (a)
3. If $A = 7$, the sum of E and G is
(a) 8 (b) 10 (c) 12 (d) 14 (e) 16 Ans. (a)
4. $A - F = ?$
(a) 1 (b) 2 (c) 3 (d) 4 (e) Cannot be determined Ans. (a)
5. An integer T is as much greater than C as C is greater than E. T can be written as $A + E$. What is D?
(a) 2 (b) 3 (c) 4 (d) 5 (e) Cannot be determined Ans. (a)
6. The greatest possible value of C is how much greater than the smallest possible value of D? (a) 2 (b) 3 (c) 4 (d) 5 (e) 6 Ans. (a)

37.1. All G's are H's

2. All G's are J's or K's
3. All J's and K's are G's
4. All L's are K's
5. All N's are M's
6. No M's are G's

1. If no P's are K's, which of the following must be true?
(a) All P's are J's (b) No P is a G (c) No P is an H (d) If any P is an H it is a G
(e) If any P is a G it is a J Ans. (a)
2. Which of the following can be logically deduced from the conditions stated?
(a) No M's are H's (b) No M's that are not N's are H's (c) No H's are M's
(d) Some M's are H's (e) All M's are H's Ans. (a)
3. Which of the following is inconsistent with one or more of the conditions?
(a) All H's are G's (b) All H's that are not G's are M's (c) Some H's are both M's and G's
(d) No M's are H's (e) All M's are H's Ans. (a)
4. The statement "No L's are J's" is
I. Logically deducible from the conditions stated
II. Consistent with but not deducible from the conditions stated
III. Deducible from the stated conditions together with the additional statement "No J's are K's"
(a) I only (b) II only (c) III only (d) II and III only
(e) Neither I, II nor III Ans. (a)

38. In country X, democratic, conservative and justice parties have fought three civil wars in twenty years. To restore stability an agreement is reached to rotate the top offices President, Prime Minister and Army Chief among the parties so that each party controls one and only one office at all times. The three top office holders must each have two deputies, one from each of the other parties. Each deputy must choose a staff composed of equally members of his or her chiefs party and member of the third party.

1. When Justice party holds one of the top offices, which of the following cannot be true
(a) Some of the staff members within that office are justice party members

- (b) Some of the staff members within that office are democratic party members
- (c) Two of the deputies within the other offices are justice party members
- (d) Two of the deputies within the other offices are conservative party members
- (e) Some of the staff members within the other offices are justice party members.

Ans. (a)

2. When the democratic party holds presidency, the staff of the prime minister's deputies are composed

- I. One-fourth of democratic party members
- II. One-half of justice party members and one-fourth of conservative party members
- III. One-half of conservative party members and one-fourth of justice party members.

- (a) I only (b) I and II only (c) II or III but not both

- (d) I and II or I and III (e) None of these

Ans. (a)

3. Which of the following is allowable under the rules as stated:

- (a) More than half of the staff within a given office belonging to a single party
- (b) Half of the staff within a given office belonging to a single party
- (c) Any person having a member of the same party as his or her immediate superior
- (d) Half the total number of staff members in all three offices belonging to a single party
- (e) Half the staff members in a given office belonging to parties different from the party of the top office holder in that office.

Ans. (a)

4. The office of the Army Chief passes from Conservative to Justice party. Which of the following must be fired.

- (a) The democratic deputy and all staff members belonging to Justice party
- (b) Justice party deputy and all his or hers staff members
- (c) Justice party deputy and half of his Conservative staff members in the chief of staff office
- (d) The Conservative deputy and all of his or her staff members belonging to Conservative party
- (e) No deputies and all staff members belonging to conservative parties.

Ans. (a)

39. In recommendations to the board of trustees a tuition increase of \$500 per year, the president of the university said "There were no student demonstrations over the previous increases of \$300 last year and \$200 the year before". If the president's statement is accurate then which of the following can be validly inferred from the information given:

I. Most students in previous years felt that the increases were justified because of increased operating costs.

II. Student apathy was responsible for the failure of students to protest the previous tuition increases.

III. Students are not likely to demonstrate over new tuition increases.

- (a) I only (b) II only (c) I or II but not both (d) I, II and III

- (e) None

Ans. (a)

40. The office staff of XYZ corporation presently consists of three bookkeepers--A, B, C and 5 secretaries D, E, F, G, H. The management is planning to open a new office in another city using 2 bookkeepers and 3 secretaries of the present staff. To do so they plan to separate certain individuals who don't function well together. The following guidelines were established to set

up the new office

I. Bookkeepers A and C are constantly finding fault with one another and should not be sent together to the new office as a team

II. C and E function well alone but not as a team, they should be separated

III. D and G have not been on speaking terms and shouldn't go together

IV. Since D and F have been competing for promotion they shouldn't be a team

1. If A is to be moved as one of the bookkeepers, which of the following cannot be a possible working unit.

A.ABDEH B.ABDGH C.ABEFH D.ABEGH Ans.B

2. If C and F are moved to the new office, how many combinations are possible

A.1 B.2 C.3 D.4 Ans.A

3. If C is sent to the new office, which member of the staff cannot go with C

A.B B.D C.F D.G Ans.B

4. Under the guidelines developed, which of the following must go to the new office

A.B B.D C.E D.G Ans.A

5. If D goes to the new office, which of the following is/are true

I.C cannot go II.A cannot go III.H must also go

A.I only B.II only C.I and II only D.I and III only Ans.D

41. After months of talent searching for an administrative assistant to the president of the college the field of applicants has been narrowed down to 5--A, B, C, D, E. It was announced that the finalist would be chosen after a series of all-day group personal interviews were held. The examining committee agreed upon the following procedure.

I. The interviews will be held once a week

II. 3 candidates will appear at any all-day interview session

III. Each candidate will appear at least once

IV. If it becomes necessary to call applicants for additional interviews, no more than 1 such applicant should be asked to appear the next week

V. Because of a detail in the written applications, it was agreed that whenever candidate B appears, A should also be present.

VI. Because of travel difficulties it was agreed that C will appear for only 1 interview.

1. At the first interview the following candidates appear A, B, D. Which of the following combinations can be called for the interview to be held next week.

A.BCD B.CDE C.ABE D.ABC Ans.B

2. Which of the following is a possible sequence of combinations for interviews in 2 successive weeks

A.ABC;BDE B.ABD;ABE C.ADE;ABC D.BDE;ACD Ans.C

3. If A, B and D appear for the interview and D is called for additional interview the following week, which 2 candidates may be asked to appear with D?

I. A II. B III. C IV. E

A.I and II B.I and III only C.II and III only D.III and IV only

Ans.D

4. Which of the following correctly state(s) the procedure followed by the search committee

I.After the second interview all applicants have appeared at least once

II.The committee sees each applicant a second time

III.If a third session,it is possible for all applicants to appear at least twice

A.I only

B.II only

C.III only

D.Both I and II

Ans.A

- 42.A certain city is served by subway lines A,B and C and numbers 1 2 and 3

When it snows , morning service on B is delayed When it rains or snows , service on A, 2 and 3 are delayed both in the morning and afternoon When temp. falls below 30 degrees farenheit

afternoon service is cancelled in either the A line or the 3 line,

but not both When the temperature rises over 90 degrees farenheit, the afternoon service is

cancelled in either the line C or the 3 line but not both.When the service on the A line is delayed

or cancelled, service on the C line which connects the A line, is delayed When service on the 3

line is cancelled, service on the B line which connects the 3 line is delayed.

1. On Jan 10th, with the temperature at 15 degree farenheit, it snows all day. On how many lines will service be affected, including both morning and afternoon.

(A) 2

(B) 3

(C) 4

(D) 5

Ans. D

2. On Aug 15th with the temperature at 97 degrees farenheit it begins to rain at 1 PM. What is the minimum number of lines on which service will be affected?

(A) 2

(B) 3

(C) 4

(D) 5

Ans. C

3. On which of the following occasions would service be on the greatest number of lines disrupted.

(A) A snowy afternoon with the temperature at 45 degree farenheit

(B) A snowy morning with the temperature at 45 degree farenheit

(C) A rainy afternoon with the temperature at 45 degree farenheit

(D) A rainy afternoon with the temperature at 95 degree farenheit

Ans. B

- 43.In a certain society, there are two marriage groups, red and brown. No marriage is permitted within a group. On marriage, males become part of their wives groups; women remain in their own group. Children belong to the same group as their parents. Widowers and divorced males revert to the group of their birth. Marriage to more than one person at the same time and marriage to a direct descendant are forbidden

1. A brown female could have had

I. A grandfather born Red

II. A grandmother born Red

III Two grandfathers born Brown

(A) I only

(B) III only

(C) I, II and III

(D) I and II only

Ans. D

2. A male born into the brown group may have

(A) An uncle in either group

(B) A brown daughter

(C) A brown son

(D) A son-in-law born into red group

Ans. A

3. Which of the following is not permitted under the rules as stated.

- (A) A brown male marrying his father's sister
- (B) A red female marrying her mother's brother
- (C) A widower marrying his wife's sister
- (D) A widow marrying her divorced daughter's ex-husband

Ans. B

4. . If widowers and divorced males retained their group they had upon marrying which of the following would be permissible (Assume that no previous marriage occurred)

- (A) A woman marrying her dead sister's husband
- (B) A woman marrying her divorced daughter's ex-husband
- (C) A widower marrying his brother's daughter
- (D) A woman marrying her mother's brother who is a widower.

Ans. D

- 5. I. All G's are H's
- II. All G's are J's or K's
- III All J's and K's are G's
- IV All L's are K's
- V All N's are M's
- VI No M's are G's

44. There are six steps that lead from the first to the second floor. No two people can be on the same step

Mr. A is two steps below Mr. C

Mr. B is a step next to Mr. D

Only one step is vacant (No one standing on that step)

Denote the first step by step 1 and second step by step 2 etc.

1. If Mr. A is on the first step, Which of the following is true?

- (a) Mr. B is on the second step
- (b) Mr. C is on the fourth step.
- (c) A person Mr. E, could be on the third step
- (d) Mr. D is on higher step than Mr. C.

Ans: (d)

2. If Mr. E was on the third step & Mr. B was on a higher step than Mr. E which step must be vacant

- (a) step 1
 - (b) step 2
 - (c) step 4
 - (d) step 5
 - (e) step 6
- Ans: (a)

3. If Mr. B was on step 1, which step could A be on?

- (a) 2&e only
 - (b) 3&5 only
 - (c) 3&4 only
 - (d) 4&5 only
 - (e) 2&4 only
- Ans: (c)

4. If there were two steps between the step that A was standing and the step that B was standing on, and A was on a higher step than D , A must be on step

- (a) 2
 - (b) 3
 - (c) 4
 - (d) 5
 - (e) 6
- Ans: (c)

5. Which of the following is false

i. B&D can be both on odd-numbered steps in one configuration

ii. In a particular configuration A and C must either both an odd numbered steps or both an even-numbered steps

iii. A person E can be on a step next to the vacant step.

(a) i only (b) ii only (c) iii only (d) both i and iii Ans: (c)

45. Six swimmers A, B, C, D, E, F compete in a race. The outcome is as follows.

i. B does not win.

ii. Only two swimmers separate E & D

iii. A is behind D & E

iv. B is ahead of E, with one swimmer intervening

v. F is a head of D

1. Who stood fifth in the race ?

(a) A (b) B (c) C (d) D (e) E Ans: (e)

2. How many swimmers separate A and F ?

(a) 1 (b) 2 (c) 3 (d) 4 (e) cannot be determined Ans: (d)

3. The swimmer between C & E is

(a) none (b) F (c) D (d) B (e) A Ans: (a)

4. If the end of the race, swimmer D is disqualified by the Judges then swimmer B finishes in which place

(a) 1 (b) 2 (c) 3 (d) 4 (e) 5 Ans: (b)

46. Five houses lettered A, B, C, D, & E are built in a row next to each other. The houses are lined up in the order A, B, C, D, & E. Each of the five houses has a colored chimney. The roof and chimney of each house must be painted as follows.

i. The roof must be painted either green, red, or yellow.

ii. The chimney must be painted either white, black, or red.

iii. No house may have the same color chimney as the color of roof.

iv. No house may use any of the same colors that the every next house uses.

v. House E has a green roof.

vi. House B has a red roof and a black chimney

1. Which of the following is true ?

(a) At least two houses have black chimney.

(b) At least two houses have red roofs. (c) At least two houses have white chimneys

(d) At least two houses have green roofs (e) At least two houses have yellow roofs

Ans: (c)

2. Which must be false ?

(a) House A has a yellow roof (b) House A & C have different color chimney

(c) House D has a black chimney (d) House E has a white chimney

(e) House B & D have the same color roof. Ans: (b)

3. If house C has a yellow roof. Which must be true.

(a) House E has a white chimney (b) House E has a black chimney

(c) House E has a red chimney (d) House D has a red chimney

(e) House C has a black chimney Ans: (a)

4. Which possible combinations of roof & chimney can house

I. A red roof & a black chimney II. A yellow roof & a red chimney

III. A yellow roof & a black chimney

(a) I only (b) II only (c) III only (d) I & II only (e) I & II & III Ans: (e)

47. Find $x+2y$

(i). $x+y=10$ (ii). $2x+4y=20$

Ans: (b)

48. Is angle BAC a right angle

(i) $AB=2BC$ (ii) $BC=1.5AC$

Ans: (e)

49. Is x greater than y

(i) $x=2k$ (ii) $k=2y$

Ans: (e)