VQAR – II
UNIT – I & II QUESTION BANK

1. A car covers $300\ km$ in $15\ h$. Find the speed of the car.
2. A bus is running with a uniform speed of $37\ km/h$. What distance will be covered by bus in $8\ h$?
3. A bus covers a distance of $400\ km$ with a speed of $20\ km/h$. What time is taken by the bus to cover this distance?
4. Ram and Shyam are moving in the directions opposite to each other. The speeds of both persons are $10\ km/h$ and $6\ km/h$, respectively. Find the speeds of Ram with respect of Shyam.
5. A man completes $30\ km$ of a journey at $6\ km/h$ and the remaining $40\ km$ of the journey in $5\ h$.Find the average speed for the whole journey.
6. Moving $\frac{6}{7}$ of its usual speed a train is $10\ min$ late. Find its usual time to cover the journey..
7. A thief is spotted by a policeman from a distance of $200\ m$. When the policeman starts chasing, the thief also starts running. If the speed of the thief be $16\ km/h$ and that of the policeman be $20\ km/h$, how far the thief will have run before he is overtaken?
8. The ratio between the speeds of two cars is $7:8$. If the 2^{nd} car runs $200\ km$ in $5\ h$, then find the speed of the 1^{st} car.
9. A bus covers a certain distance in $16\ h$. It covers half the distance at $40\ km/h$ and the rest at $60\ km/h$. Find the length of the journey.
10. A person goes from one point to another point with a speed of $5\ km/h$ and comes back to starting point with a speed of $3\ km/h$. Find the average speed for the whole journey.
11. A train crosses a platform in $30\ s$ travelling with a speed of $60\ km/h$. If the length of the train be $200\ m$, then the length of the platform is
12. A train running at the speed of $72\ km/h$ goes past a pole in $15\ s$. What is the length of the train?
13. Two trains are moving in opposite directions with speeds of $6\ m/s$ and $12\ m/s$, respectively. Find their relative speed.
14. A $110\ m$ long train is running at a speed of $60\ km/h$. How many seconds, does it take to cross an another train of length $7170\ m$, which is standing on parallel track?

15. The ratio between the speeds of two trains is $8:9$. Second train covers $360\ km$ in $4\ h$. Distance covered by first train in Distance covered by first train in $3\ h$ (in km) is
16. A $440\ m$ long train is running at $240\ km/h$. In what time will it pass a man running in the direction opposite to that of the train at $24\ km/h$?
17. Excluding stoppages, the speed of a train is $108\ km/h$ and including stoppages, it is $90\ km/h$. For how many minutes does the train stop per hour?
18. P and Q are $27\ km$ away. Two trains will having speeds of $24\ km/h$ and $18\ km/h$ respectively start simultaneously from P and Q and travel in the same direction. They meet at a point R beyond Q. Distance QR is
19. The average speed of a bus is three-fourth the average speed of a train. The train coves $240\ km$ in $12\ h$. How much distance will the bus cover in $7\ h$?
20. A train takes $9\ s$ to cross a pole. If the speed of the train is $48\ km/h$, then length of the train is
21. A swimmer's speed downstream is $11\ km/h$ and speed of the stream is $1.5\ km/h$. Find the upstream speed of swimmer.
22. A boat goes $48\ km$ downstream in $20\ h$. It takes $4\ h$ more to cover the same distance against the stream. What is the speed of the boat in still water?
23. Keshav can row $60\ km$ downstream and $36\ km$ upstream, taking $10\ h$ each time. What is the velocity of the current?
24. Sameer can row a certain distance downstream in $24\ h$ and can come back covering the same distance in $36\ h$. If the stream flows at the rate of $12\ km/h$, find the speed of Sameer in still water.
25. A boatman takes twice as long to row a distance against the stream as to row the same distance with the stream. Find the ratio of speeds of the boat in still water and the stream.
26. A sailor sails a distance of $48\ km$ along the flow of a river in $8\ h$. If it takes $12\ h$ to return the same distance, then the speed of the flow of the river is
27. Ravi can row downstream at $9\ km/h$ and upstream at $5\ km/h$. Find the speed of Ravi in still water and speed of current.
28. A streamer goes downstream from one port to another in $4\ h$. It covers the same distance upstream in $5\ h$. If the speed of the stream is $2\ km/h$, then find the distance between the two ports.

29. Speed of motorboat in still water is $45\ km/h$. If the motorboat travels $80\ km$ along the stream in $1\ h\ 20\ min$, then the time taken by it to cover the same distance against the stream will be
30. A boat covers a distance of $30\ km$ downstream in $2\ h$ while it takes $6\ h$ to cover the same distance upstream. What is the speed of the boat (in km/h)?
31. In a race, P gives Q a start of 25 m making length of race for Q a distance of 175 m. Find the total length of the race.
32. In a game of 100 points, A scores 100 points while B scores only 65 points. In this game, how much points can A give to B?
33. In a 100 m race, X beats Y by 140 m or 14 s. What will be the X's time over the course?
34. In a 400 m race, A runs at a speed of 16 m/s. If A gives B a start of 16 m and still beats him by 40 s, what will be the speed of B?
35. A can run 45 m while B runs 50 m. In a km race B beats A by how many metres?
36. Raman covers 1 km in 8 min while Suman covers the same distance in 10 min. By what distance does Raman beat Suman?
37. In a game of 200 points, A can give 40 points to B and 56 points to C. How many points can B give to C?
38. In a 200 m race, A can beat by B by 50 m and B can beat C by 8 m. In the same race, A can beat C by what distance?
39. In a game of billiards, A can give B 20 points in the game of 120 points and he can give C 30 points in the game of 120 points. How many points can B give C in a game of 90?
40. A runs $1\frac{2}{3}$ times as fast as B. If A gives B a start of 40 m, how far must the winning post be, so that A and B might reach it at the same time?
41. A policeman sees a chain snatcher at a distance of 50 m. He starts chasing the chain snatcher who is running with a speed 2 m/s while the policeman chasing him with a speed of 4 m/s. Find the distance covered by the chain snatcher when he is caught by the policeman.
42. Nilu covers a distance by walking for 6 h. While returning his speed decreases by 2 km/h and he takes 9 h to cover the same distance. What was her speed while returning?
43. Two trains are running in the same direction. The speeds of two trains are 5 km/h and 15 km/h respectively. What will be the relative speed of second train with respect to first?

44. A person travels a certain distance at 3 km/h and reaches 15 min late. If he travels at 4 km/h, he reaches 15 min earlier. The distance he has to travel is
45. A boy walking at a speed of 20 km/h reaches his school 30 min late. Next time he increases his speed by 4 km/h but still he is late by 10 min. Find the distance of the school from his home.
46. Two men start together to walk a certain distance one at 4 km/h and another at 3 km/h. The former arrives half an hour before the latter. Find the distance.
47. The speed of a bus is 72 km/h. The distance covered by the bus in 5 s is
48. A person covers a certain distance with a speed of 18 km/h in 8 min. If he wants to cover the same distance in 6 min, what should be his speed?
49. A man increases his speed to $\frac{7}{5}$ times of his original speed and reaches his office 20 min before to fixed time, then find the usual time taken by him?
50. A person covers $20\frac{2}{5}$ km in 3 h. What distance will he cover in 5 h?
51. A and B together can do a price of work in 12 days ,while B alone can finish it in 30 days. A alone can finish the work in
52. A alone can complete a work in 12 days and B alone can complete the same work in 24 days . In how many days can A and B together complete the same work ?
53. A can do a piece of work in 4 days and B can complete the same work in 12 days. What is the number of days required to do the same work together?
54. A and B together can complete work in 3 days . they started together but after 2 days , B left the work . If the work is completed after 2 more days , B alone could do the work in how many days?
55. A an B can complete a work in 8 days , working together . B alone can do it in 12 days . After working for 4 days , B left the work . how many days will A take to complete the remaining work?
56. 20 men complete one-third of a work in 20 days . how many more men should be employed to finish the rest of work in 25 more days?
57. 36 workmen are employed to finish a certain work in 48 days . But it is found that in 24 days only 2/5 work is done .How many more men must be employed to finish the work in time?
58. A alone can do a certain job in 15 days, while B alone can do it in 10 days. A started the work and was joined by B after 5 days . the work lasted for how many days?

59. 10 men and 8 women together can complete a work in 5 days . work done by one woman in a day is equal to half the work done by a man in 1 day. How many days will it take for 4 men and 6 women to complete that work?
60. If the work done by 8 men and 4 boys in 1 day is 7 times the work done by 1 man and 1 boy , then compare the work done by 1 man and 1 boy in 1 day?
61. An outlet pipe can empty a cistern in 30 min , then what part of the cistern will it empty in 1 min?
62. Two pipes A and B can fill a tank in 18 and 6 h, respectively . If both the pipes are opened simultaneously, hoe much time will be taken to fill the tank?
63. A cistern can be filled up in 4 h by an inlet A . An outlet B can empty the cistern in 8h. If both A and B are opened simultaneously , then after how much time will the cistern get filled?
64. A pipe can fill a tank in 10h , while an another pipe can empty it in 6h. find the time taken to empty the tank , when both the pipes are opened up simultaneously.
65. Pipe A can fill a tank in 30 min , while pipe B can fill the same tank in 10 min and pipe C can empty the full tank in 40 min . If all the pipes are opened together , how much time will be needed to make the tank full?
66. Through an inlet a tank takes 8 h to get filled up. Due to a leak in the bottom , it takes 2 h more to get it filled completely . If the tank is full, how much time will the leak take to empty it?
67. Three taps A,B and C together can fill an empty cistern in 10 min . the tap A alone can fill it in 30 min and tap B alone can fill it in 40 min . how iong will the tap C alone take to fill it?
68. A tank has a leak which would empty it in 8 h . A tap is turned on which admits 3L a min into the tank and it is now emptied in 12 h. how many liters does the tank hold ?
69. Inlet A is four times faster than inlet B to fill a tank if A alone can fill it in 15 min , how long will it take if both the pipes are opened together.
70. There are two inlets A and B connected to a tank . A and B can fill the tank in 16 h and 10 h ,respectively . If both the pipes are opened alternately for 1 h , starting from A , then how much time will the tank take to be filled ?
71. Three pumps working 8 hours a day can empty a tank in 2 days. How many hours a day must 4 pumps work to empty the tank in 1 day?
72. If a 250 gm of potato costs 60 paise, how many paise will 200 gm cost?

73. A man completes $\frac{5}{8}$ of a job in 10 days. At this rate, how many more days will it takes him to finish the job?
74. Running at the same constant rate, 6 identical machines can produce a total of 270 bottles per minute. At this rate, how many bottles could 10 such machines produe in 4 minutes?
75. A fort had provision of food for 150 men for 45 days. After 10 days, 25 men left the fort. The number of days for which the remaining food will last is
76. 39 persons can repair a road in 12 days, working 5 hours a day. In how many days will 30 persons, working 6 hours a day then complete the work?
77. A wheel that has 6 cogs is meshed with a larger wheel of 14 cogs. When the smaller wheel has made 21 revolution, then the number of revolutions made by the larger wheel is
78. In a camp, there is a meal for 120 men or 200 children. If 150 children have taken the meal, how many men will be catered to with remaining meal?
79. 36 men can comlete a piece of work in 18 days. In how many days will 27 men complete the same work?
80. A flagstaff 17.5 m high casts a shadow of length 40.25 m. The height of the building which casts a shadow of length 28.75 m under similar conditions will be
81. Find the value of 5_2^P then
82. In how many ways, the letters of the word 'ARMOUR' can be arranged?
83. In how many different ways 5 girls can be seated in a row?
84. If $n_4^P = 360$ then find the value of n is
85. How many different signals, can be made by 5 flags from 8 flags of different colours?
86. If $50_r^C = 50_{C_{r+2}}$ then the value of r is
87. In how many ways, can the letters of the word 'ASSASSINATION' be arranged, so that all the S are together?
88. Find the number of ways, in which 12 different beads can be arranged to form a necklace.
89. In a meeting between two countries, each country has 12 delegates. All the delegates of one country shake hands with all delegated of the other country. Find the number of handshakes possible?
90. In how many different ways, can the letters of the word "INHALE' be arranged?

91. 20 persons were invited to a party. In how many ways, they and the host can be seated at a circular table?
92. How many necklaces of 12 beads can be made from 18 beads of various colours?
93. How many straight lines can be drawn from 15 non-collinear points?
94. In how many ways, a committee of 3 men and 2 women can be formed out of a total of 4 men and 4 women?
95. Find the value of 15_{11}^{C}
96. In a cricket tournament 5 matchs were played, then in how many ways result can be declared?
97. Find the number of ways in which 10 boys can form a ring?
98. A question paper has two parts, part A and part B, each containing 10 questions. If the student has to choose 8 from part A and 5 from part B, in how many ways can he choose the question?
99. Find the number of ways, in which 7 books can be selected out of 10 books available.
100. There are 25 students in a class with 15 boys and 10 girls. The class teacher selects either a boy or a girl for monitor post of the class. In how many ways, the class teacher can make this selection?

101. A child has four pockets and three marbles. In how many ways, the child can put the marbles in the pockets?

102. There is a 7-digit telephone number with all different digits. If the digit at extreme right and extreme left are 5 and 6 respectively, find how many such telephone numbers are possible?

103. In how many ways, the letters of the word ‘BANKING’ can be arranged?

104. A hall has 12 gates. In how many ways, can a man enter the hall through one gate and come out through a different gate?

105. How many numbers of four digits can be formed with the digits 1,2,3,4 and 5?

106. Six students sitting in a row are given one toffee each from three types of toffees such that no two adjacent child gets same type of toffee. In how many ways can the toffee be distributed among the students?

107. A postmaster wants to get delivered 6 letters at six different addresses. In the post office there are 2 postmen then in how ways can the postmaster send the letters at different addresses through the postmen?

108. A boy is playing a Snake & Ladder game and he is on 91 and has to get to 100 to complete the game. There is a snake on 93 and 96. In how many ways he can complete the game, if he doesn't want to roll the dice more than three times.

109. 8 members are to be selected from a group of 9 males and 7 females. In how many ways will the members with at most 3 females and atleast 4 males be selected?

110. Find the number of diagonals formed in hexagon.

111. There is a polygon of 12 sides. How many triangles can be drawn using the vertices of polygon?

112. In how many ways, a cricket team of 11 players can be made from 15 players, if a particular player is never chosen?

113. There are 10 points in a plane, out of which 5 are collinear. Find the number of straight lines formed by joining them.

114. How many numbers between 400 and 1000 can be made with the digits 2,3,4,5,6 and 0?

115. Find the number of permutations of the letter of the word in ALLAHABAD.

116. If $(1 \times 2 \times 3 \times 4 \times \ldots\ldots \times n) = n!$ then $(14! - 13! - 12!)$ is equal to

117. If $15^{C}_{3r} = 15^{C}_{r+3}$ then find the value of r is

118. Find the number of combinations that can be formed with 5 oranges, 4 mangoes and 3 bananas, when one fruit of each kind is taken.

119. In how many ways, the letters of the word "BANKING' can be arranged?

120. A committee if 5 members is going to be formed from 3 trainees, 4 professors and 6 research associates. How many ways can they be selected if there are 4 professors and 1 research associate or 3 trainees and 2 professors?