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NGM COLLEGE (AUTONOMOUS) :: POLLACHI

DEPARTMENT OF MATHEMATICS

B.Sc. MATHEMATICS **Max Marks 50**

IV SEMESTER

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END OF SEMESTER EXAMINATIONS: MAY - 2023

21UMS4N1 – QUANTITATIVE APTITUDE - II

SECTION - A (10 X 1 = 10 MARKS)

ANSWER ALL THE QUESTIONS.

1. Father is aged 3 times more than his son Ronit. After 8 years, he would be two and a half times of Ronit's age. After further 8 years, how many times would he be of Ronit's age?
   a) 2 times b) 2 ½ times c) 2 ¾ times d) 3 times

2. A is two years older than B who is twice as old as C. If the total of the ages of A, B and C be 27, then how old is B?
   a) 10 yrs. b) 9 yrs. c) 8 yrs. d) 7 yrs.

3. X and Y can do a piece of work in 20 days and 12 days respectively. X started the work alone and then after 4 days Y joined him till the completion of the work. How long did the work last?
   a) 10 days b) 15 days c) 6 days d) 20 days

4. A is 30% more efficient than B. How much time will they, working together, take to complete a job which A alone could have done in 23 days?
   a) 13 days b) 11 days c) 20 3/17 d) None of these

5. A person crosses a 600 m long street in 5 minutes. What is his speed in km per hour?
   a) 7.2 b) 3.6 c) 8.4 d) 10

6. An aeroplane covers a certain distance at a speed of 240 kmph in 5 hours. To cover the same distance in 1 2/3 hours, it must travel at a speed of
   a) 720 Kmph b) 360 Kmph c) 700Kmph d) 350 Kmph

7. A train running at the speed of 60 km/hr crosses a pole in 9 seconds. What is the length of the train?
   a) 150 metres b) 120 metres c) 180 metres d) 324 metres

8. A train 125 m long passes a man, running at 5 km/hr in the same direction in which the train is going, in 10 seconds. The speed of the train is
   a) 50 km/hr b) 54 km/hr c) 55 km/hr d) 45 km/hr

9. A boat can travel with a speed of 13 km/hr in still water. If the speed of the stream is 4 km/hr, find the time taken by the boat to go 68 km downstream
   a) 4 Hours b) 3 Hours c) 2 hours d) 1 hour

10. A man's speed with the current is 15 km/hr and the speed of the current is 2.5 km/hr. The man's speed against the current is:
    a) 10 km/hr b) 8.5 km/hr c) 9 km/hr d) 12.5 km/hr

SECTION – B (5 X 8 = 40 MARKS)
ANSWER ANY 5 OF THE FOLLOWING QUESTIONS.
(Any 5 From Question 11 to Question 18)

11. 1) .A father said to his son, "I was as old as you are at the present at the time of your birth". If the father's age is 38 years now, the son's age five years back was
    a) 14 yrs. b) 19 yrs. c) 33 yrs. d) 38 yrs.

    2) Present ages of Sameer and Anand are in the ratio of 5 : 4 respectively. Three years hence, the ratio of their ages will become 11 : 9 respectively. What is Anand's present age in years?
    a) 24 yrs. b) 27 yrs. c) 40 yrs. d) can't be predicted.

    3) Six years ago, the ratio of the ages of Kunal and Sagar was 6 : 5. Four years hence, the ratio of their ages will be 11 : 10. What is Sagar's age at present?
    a) 16 yrs. b)18 yrs. c) 20 yrs. d) can't be predicted

    4) The sum of the present ages of a father and his son is 60 years. Six years ago, father's age was five times the age of the son. After 6 years, son's age will be
    a) 20 yrs. b)18 yrs. c) 14 yrs. d) 12 yrs.

    5) At present, the ratio between the ages of Arun and Deepak is 4 : 3. After 6 years, Arun's age will be 26 years. What is the age of Deepak at present ?
    a) 15 yrs. b) 17 yrs. c) 19 yrs. d) 21 yrs.

    6) Sachin is younger than Rahul by 7 years. If their ages are in the respective ratio of 7: 9, how old is Sachin?
    a) 24.5 yrs. b) 28.5 yrs. c) 14.5 yrs. d) None of these.

    7) The present ages of three persons in proportions 4 : 7 : 9. Eight years ago, the sum of their ages was 56. Find their present ages (in years).
    a) 16, 28, 36 b) 8, 20, 28 c) 20, 35, 45 d) None of these.

    8) Q is as much younger than R as he is older than T. If the sum of the ages of R and T is 50 years, what is definitely the difference between R and Q's age?
    a) Data inadequate b) 1 year c) 2 years d) 25 yrs.

12. 1) A alone can do a piece of work in 6 days and B alone in 8 days. A and B undertook to do it for Rs. 3200. With the help of C, they completed the work in 3 days. How much is to be paid to C?
    a) Rs. 400 b) Rs. 375 c) Rs. 600 d) Rs. 800

    2) A can lay railway track between two given stations in 16 days and B can do the same job in 12 days. With help of C, they did the job in 4 days only. Then, C alone can do the job in
    a) 9 3/5 b) 9 2/5 c) 9 1/5 d) 9 4/5

3) If 6 men and 8 boys can do a piece of work in 10 days while 26 men and 48 boys can do the same in 2 days, the time taken by 15 men and 20 boys in doing the same type of work will be

a) 4 days b) 5 days c) 6 days d) 7 days

4) A can do a piece of work in 4 hours; B and C together can do it in 3 hours, while A and C together can do it in 2 hours. How long will B alone take to do it?

a) 12 hours b) 24 hours c) 18 hours d) 6 hours

5) A can do a certain work in the same time in which B and C together can do it. If A and B together could do it in 10 days and C alone in 50 days, then B alone could do it in

a) 25 days b) 15 days c) 5 days d) 35 days

6) A does 80% of a work in 20 days. He then calls in B and they together finish the remaining work in 3 days. How long B alone would take to do the whole work?

a) 37 ½ days b) 37 days c)27 ½ d) 27 days

7) A machine P can print one lakh books in 8 hours, machine Q can print the same number of books in 10 hours while machine R can print them in 12 hours. All the machines are started at 9 A.M. while machine P is closed at 11 A.M. and the remaining two machines complete work. Approximately at what time will the work (to print one lakh books) be finished?

a) 1.00 P.M. b) 1.00 A.M. c) 12.30 P.M. d) 1.30 P.M.

8) 10 women can complete a work in 7 days and 10 children take 14 days to complete the work. How many days will 5 women and 10 children take to complete the work?

a) 7 b) 5 c) 3 d) can't be determined

13. 1) Excluding stoppages, the speed of a bus is 54 kmph and including stoppages, it is 45 kmph. For how many minutes does the bus stop per hour?

a) 10 b) 12 c) 20 d) 9

2) In a flight of 600 km, an aircraft was slowed down due to bad weather. Its average speed for the trip was reduced by 200 km/hr and the time of flight increased by 30 minutes. The duration of the flight is:

a) 1 Hour b) 2 Hours c) 3 Hours d) 4 Hours

3) A man complete a journey in 10 hours. He travels first half of the journey at the rate of 21 km/hr and second half at the rate of 24 km/hr. Find the total journey in km

a) 224 km b) 220 Km c) 234 Km d) 230 Km

4) The ratio between the speeds of two trains is 7 **:** 8. If the second train runs 400 km in 4 hours, then the speed of the first train is

a) 87.5 km/hr b) 84 km/hr c) 75 km/hr d) 70 km/hr

5) A man on tour travels first 160 km at 64 km/hr and the next 160 km at 80 km/hr. The average speed for the first 320 km of the tour is

a) 71.11 km/hr b) 36 km/hr c) 35.55 km/hr d) 71 km/hr

6) A car travelling with 5/7 of its actual speed covers 42 km in 1 hr 40 min 48 sec. Find the actual speed of the car

a) 35 km/hr b) 30Km/hr c) 25 km/hr d) 17 3/6 Km/hr

7) In covering a distance of 30 km, Abhay takes 2 hours more than Sameer. If Abhay doubles his speed, then he would take 1 hour less than Sameer. Abhay's speed is

a) 5 kmph b) 6 kmph c) 6.25 kmph d) 7.5 kmph

8) Robert is travelling on his cycle and has calculated to reach point A at 2 P.M. if he travels at 10 kmph, he will reach there at 12 noon if he travels at 15 kmph. At what speed must he travel to reach A at 1 P.M.?

a) 12 kmph b) 11 kmph c) 8 kmph d) 6 kmph

14. 1) The length of the bridge, which a train 130 metres long and travelling at 45 km/hr can cross in 30 seconds, is

a) 245 m b) 225 m c) 220 m d) 250 m

2) Two trains running in opposite directions cross a man standing on the platform in 27 seconds and 17 seconds respectively and they cross each other in 23 seconds. The ratio of their speeds is

a) 3 : 2 b) 1 : 3 c) 3 : 4 d) None of these

3) A train passes a station platform in 36 seconds and a man standing on the platform in 20 seconds. If the speed of the train is 54 km/hr, what is the length of the platform?

a) 240 m b) 220 m c) 120 m d) 300 m

4) A train 240 m long passes a pole in 24 seconds. How long will it take to pass a platform 650 m long?

a) 89 sec b) 65 Sec c) 100 sec d) 150 sec

5) A train 360 m long is running at a speed of 45 km/hr. In what time will it pass a bridge 140 m long?

a) 40 Sec b) 42 Sec c) 45 Sec d) 48 Sec

6) Two trains are moving in opposite directions @ 60 km/hr and 90 km/hr. Their lengths are 1.10 km and 0.9 km respectively. The time taken by the slower train to cross the faster train in seconds is

a) 48 b) 45 c) 39 d) 49

7) A jogger running at 9 kmph alongside a railway track in 240 metres ahead of the engine of a 120 metres long train running at 45 kmph in the same direction. In how much time will the train pass the jogger?

a) 36 sec b) 3.6 sec c) 18 sec d) 72 sec

8) Two trains 140 m and 160 m long run at the speed of 60 km/hr and 40 km/hr respectively in opposite directions on parallel tracks. The time (in seconds) which they take to cross each other, is

a) 10.8 b) 9.6 c) 10 d) 9

15. 1) A boat running upstream takes 8 hours 48 minutes to cover a certain distance, while it takes 4 hours to cover the same distance running downstream. What is the ratio between the speed of the boat and speed of the water current respectively?

a) 8 : 3 b) 3 : 2 c) 2 : 1 d) Can’t be determined

2) A motorboat, whose speed in 15 km/hr in still water goes 30 km downstream and comes back in a total of 4 hours 30 minutes. The speed of the stream (in km/hr) is

a) 5 b) 6 c) 4 d) 10

3) In one hour, a boat goes 11 km/hr along the stream and 5 km/hr against the stream. The speed of the boat in still water (in km/hr) is

a) 8 km/h b) 3 km/hr c) 5 km/hr d) 9 km/hr

4) A boat running downstream covers a distance of 16 km in 2 hours while for covering the same distance upstream, it takes 4 hours. What is the speed of the boat in still water?

a) 6 km/hr b) 4 km/hr c) 8 km/hr d) Data inadequate

5) The speed of a boat in still water in 15 km/hr and the rate of current is 3 km/hr. The distance travelled downstream in 12 minutes is:

a) 3.6 km b) 2.4 km c) 1.8 km d) 1.2 km

6) A boat takes 90 minutes less to travel 36 miles downstream than to travel the same distance upstream. If the speed of the boat in still water is 10 mph, the speed of the stream is

a) 2 mph b) 2.5 mph c) 3 mph d) 4 mph

7) A man can row at 5 kmph in still water. If the velocity of current is 1 kmph and it takes him 1 hour to row to a place and come back, how far is the place?

a) 2.4 km b) 2.5 km c) 3 km d) 3.6 km

8) A boatman goes 2 km against the current of the stream in 1 hour and goes 1 km along the current in 10 minutes. How long will it take to go 5 km in stationary water?

a) 1 hr 15 min b) 1 hr 30 min c) 1 hr d) 30 min

Each of the following questions given below consists of one or more statements decide whether the data provided in the statement(s) is / are sufficient to answer the given question.

16. 1) What is the speed of the train whose length is 210 metres?

I. The train crosses another train (Howrah Express/12869) of 300 metres length running in opposite direction in 10 seconds

II. The train crosses another train (Howrah Express/12869) running in the same direction at the speed of 60 km/hr in 30 seconds

a) I alone sufficient while II alone not sufficient to answer
b) II alone sufficient while I alone not sufficient to answer
c) Either I or II alone sufficient to answer
d) Both I and II are necessary to answer
e) Both I and II are not sufficient to answer

2) What is the length of a running train?

I. The train crosses a man in 9 seconds.

II. The train crosses a 240 metre long platform in 24 seconds.

a) I alone sufficient while II alone not sufficient to answer
b) II alone sufficient while I alone not sufficient to answer
c) Either I or II alone sufficient to answer
d) Both I and II are necessary to answer
e) Both I and II are not sufficient to answer

17. 1) Two towns are connected by railway. Can you find the distance between them.

I. The speed of the mail train is 12 km/hr more than that of an express train.

II. A mail train takes 40 minutes less than an express train to cover the distance.

a) I alone sufficient while II alone not sufficient to answer
b) II alone sufficient while I alone not sufficient to answer
c) Either I or II alone sufficient to answer
d) Both I and II are not sufficient to answer
e) Both I and II are necessary to answer

2) What is Sonia's present age?

I. Sonia's present age is five times Deepak's present age.

II. Five years ago her age was twenty-five times Deepak's age at that time.

a) I alone sufficient while II alone not sufficient to answer
b) II alone sufficient while I alone not sufficient to answer
c) Either I or II alone sufficient to answer
d) Both I and II are necessary to answer
e) Both I and II are not sufficient to answer

18. 1) What is the speed of the boat in still water?

I. The speed downstream is 12 kmph.

II. The speed upstream is 4 kmph.

III. In a to and fro journey between two points, the average speed of the boat was 6 kmph.

a) I and II only
b) All I, II and III
c) III, and either I or II
d) Any two of the three
e) None of these

2) What is the speed of the boat in still water?

I. The boat covers a distance of 48 kms in 6 hours while running upstream.

II. The boat covers the same distance in 4 hours while running downstream.

a) I alone sufficient while II alone not sufficient to answer
b) II alone sufficient while I alone not sufficient to answer
c) Either I or II alone sufficient to answer
d) Both I and II are necessary to answer
e) Both I and II are not sufficient to answer

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