

# DCA CLASSES

## CLASS VIII – MATHEMATICS – CHAPTER 13

### DIRECT AND INVERSE PROPORTIONS

Name:

Date:

- 01.** The cost of 5 metres of a particular quality of cloth is Rs 210. Find the cost of 2 metres of cloth of the same type.  
(a). Rs 84                      (b). Rs 60                      (c). Rs 90                      (d). Rs 100
- 02.** A mixture of paint is prepared by mixing 1 part of red pigments with 8 parts of base. How many parts of base will be used in mixture by mixing 4 part of red pigment?  
(a). 28                      (b). 32                      (c). 36                      (d). 40
- 03.** 6 pipes are required to fill a tank in 1 hour 20 minutes. How long will it take if only 5 pipes of the same type are used?  
(a). 56 minutes                      (b). 80 minutes                      (c). 96 minutes                      (d). 72 minutes
- 04.** There are 100 students in a hostel. Food provision for them is for 20 days. How long will these provisions last, if 25 more students join the group?  
(a). 12 days                      (b). 14 days                      (c). 16 days                      (d). 18 days
- 05.** If 15 workers can build a wall in 48 hours, how many workers will be required to do the same work in 30 hours?  
(a). 20                      (b). 22                      (c). 24                      (d). 26
- 06.** If a box of sweets is divided among 24 children, they will get 5 sweets each. How many would each get, if the number of the children is reduced by 4?  
(a). 4                      (b). 8                      (c). 6                      (d). 10
- 07.** Write the expression using exponents:  $25 \times 25 \times 25$   
(a).  $25^2$                       (b).  $25^3$                       (c).  $25^4$                       (d).  $25^5$
- 08.** A farmer has enough food to feed 20 animals in his cattle for 6 days. How long would the food last if there were 10 more animals in his cattle?  
(a). 6                      (b). 2                      (c). 4                      (d). 8
- Q01.** Fill in the blanks:  
(a). Two quantities x and y are said to be in \_\_\_\_\_ if they increase (decrease) together in such a manner that the ratio of their corresponding values remains constant.  
(b). Two quantities x and y are said to be in \_\_\_\_\_ if an increase in x causes a proportional decrease in y (and vice-versa) in such a manner that the product of their corresponding values remains constant.
- Q02.** Which of the following are in inverse proportion?  
(a). The number of workers on a job and the time to complete the job.  
(b). The time taken for a journey and the distance travelled in a uniform speed.  
(c). Area of cultivated land and the crop harvested.  
(d). The time taken for a fixed journey and the speed of the vehicle.

## DCA CLASSES

(e). The population of a country and the area of land per person.

- Q03.** An electric pole, 14 metres high, casts a shadow of 10 metres. Find the height of a tree that casts a shadow of 15 metres under similar conditions.
- Q04.** A machine in a soft drink factory fills 840 bottles in six hours. How many bottles will it fill in five hours?
- Q03.** Suppose 2 kg of sugar contains  $9 \times 10^6$  crystals. How many sugar crystals are there in 1.2 kg of sugar?
- Q04.** If the weight of 12 sheets of thick paper is 40 grams, how many sheets of the same paper would weigh 2.5 kilograms?
- Q05.** A photograph of a bacteria enlarged 50,000 times attains a length of 5 cm as shown in the diagram. What is the actual length of the bacteria?
- Q06.** Rashmi has a road map with a scale of 1 cm representing 18 km. She drives on a road for 72 km. What would be her distance covered in the map?
- Q07.** A contractor estimates that 3 persons could rewire Jasmine's house in 4 days. If, he uses 4 persons instead of three, how long should they take to complete the job?
- Q08.** A photograph of a bacteria enlarged 50,000 times attains a length of 5 cm as shown in the diagram. If the photograph is enlarged 20,000 times only, what would be its enlarged length?
- Q09.** A 5 m 60 cm high vertical pole casts a shadow 3 m 20 cm long. Find at the same time the length of the shadow cast by another pole 10 m 50 cm high.
- Q10.** A batch of bottles were packed in 25 boxes with 12 bottles in each box. If the same batch is packed using 20 bottles in each box, how many boxes would be filled?
- Q11.** In a model of a ship, the mast is 9 cm high, while the mast of the actual ship is 12 m high. If the length of the ship is 28 m, how long is the model ship?
- Q12.** A factory requires 42 machines to produce a given number of articles in 63 days. How many machines would be required to produce the same number of articles in 54 days and 49 days?
- Q13.** The scale of a map is given as 1:30000000. Two cities are 4 cm apart on the map. Find the actual distance between them.
- Q14.** Suppose 2 kg of sugar contains  $9 \times 10^6$  crystals. How many sugar crystals are there in 5 kg of sugar?
- Q15.** A loaded truck travels 14 km in 25 minutes. If the speed remains the same, how far can it travel in 5 hours?
- Q16.** A car takes 2 hours to reach a destination by travelling at the speed of 60 km/h. How long will it take when the car travels at the speed of 80 km/h?
- Q17.** Two persons could fit new windows in a house in 3 days. One of the persons fell ill before the work started. How long would the job take now?
- Q18.** A school has 8 periods a day each of 45 minutes duration. How long would each period be, if the school has 9 periods a day, assuming the number of school hours to be the same?
- Q19.** A train is moving at a uniform speed of 75 km/hour. How far will it travel in 20 minutes?