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B.M.S COLLEGE FOR WOMEN
BENGALURU – 560004

V SEMESTER END EXAMINATION – JAN/FEB-2024

BCA & BVOC-IT: QUANTITATIVE TECHNIQUES
(NEP Scheme 2021-22 onwards)

Course Code: MAT5VC01

Duration: 2 ½ Hours

QP Code: 5601

Max marks: 60

Instructions: 1. Answer all the sections.

2. Draw diagrams wherever necessary.

SECTION-A

I. Answer any SIX of the following. Each question carries TWO marks. (6x2=12)

1. Find the L.C.M and H.C.F of 140 and 200.
2. Two unbiased coins are tossed. What is the probability of getting atmost one head?
3. Find x , $x^{\frac{1}{4}} = \frac{48}{x^4}$.
4. A train moves with a speed of 108kmph. Find its speed in m/s?
5. What was the day of the week on 15 August, 1947?
6. Find the area of a square, one of whose diagonals is 3.8 m long?
7. Find the average of all prime numbers between 30 and 50.
8. A man buys an article for Rs.27.50 and sells it for Rs.28.60. Find his gain percent.
9. Find the simple interest on Rs.68000 at 16% per annum for 9 months.

SECTION-B

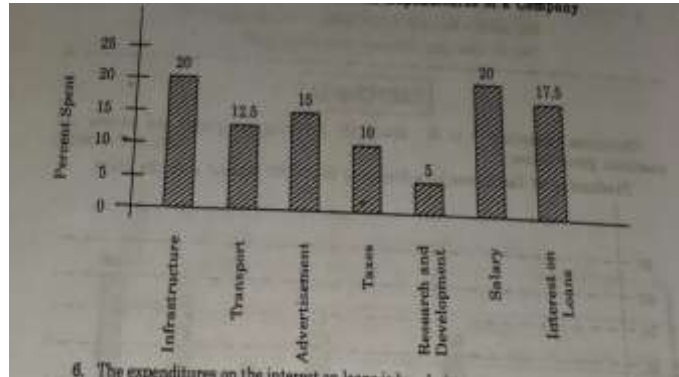
II. Answer any SIX of the following. Each question carries EIGHT marks. (6x8=48)

1. (a) Check whether 4832718 and 29435417 are divisible by 11 or not?
(b) How many arrangements can be made out of the letters of the word 'ENGINEERING'?
2. (a) Arrange the fractions $\frac{17}{18}$, $\frac{31}{36}$, $\frac{43}{45}$, $\frac{59}{60}$ in the ascending order.
(b) Ram went to a shop to buy 50kg per kg of rice. He buys two varieties of rice which cost him Rs. 4.50/kg and Rs. 5/kg. He spends a total of Rs. 240. What was the quantity of rice bought which cost him Rs. 4.50 per kg?
3. (a) Find the value of $\left\{16^{\frac{3}{2}} + 16^{-\frac{3}{2}}\right\}$.
(b) In a certain code language "EASY" is written as "5117". In the same code language, how will "BEAM" be written as?
4. A and B can do a piece of work in 18 days, B and C can do it in 24 days, A and C can do it in 36 days. In how many days will A, B and C finish it working together and separately?

5. The bar-graph given below shows the percentage distribution of total expenditures of a Company under various expense heads during 2003.

Study the graph and answer the questions that follow:

PERCENTAGE DISTRIBUTION OF TOTAL EXPENDITURES OF A COMPANY



- (i) The expenditures on the interest on loans is by what percent more than the expenditures on transport?
 (ii) What is the ratio of the total expenditure on infrastructure and transport to the total expenditure on taxes and interest on loans?
6. (a) An aero plane flies along the four sides of a square at the speeds of 200 km/hr, 400 km/hr, 600 km/hr and 800 km/hr. Find the average speed of the plane around the field.
 (b) Find the volume and surface area of cuboid 16 m long, 14 m broad and 7 m high.
7. (a) The average of 5 consecutive odd numbers is 61. What is the difference between the highest and lowest numbers?
 (b) By selling 45 lemons for Rs.40, a man loses 20%. How many should he sell for Rs. 24 to gain 20% in the transaction?
8. (a) The difference between the cost price and sale price of an article is Rs.240. If the profit is 20%, find the selling price.
 (b) A sum of money doubles itself at compound interest in 15 years. In how many years will it become eight times?
9. (a) A sum of Rs.800 amounts to Rs.920 in 3 years at simple interest. If the interest rate is increased by 3%, it would amount to how much?
 (b) Count the number of triangles in the given diagram.

