

UNIVERSITY OF JOHANNESBURG
FACULTY OF HUMANITIES
SUPPLEMENTARY EXAMINATION

Department: Academic Development Centre

Module Name: Basic Business Calculations

Module Code: BBCEX01

Date: January 2021

Duration: 2 hours

Total Marks: 100

Examiner: Dr M. Winter

Internal Moderator: Dr S. Kadaleka

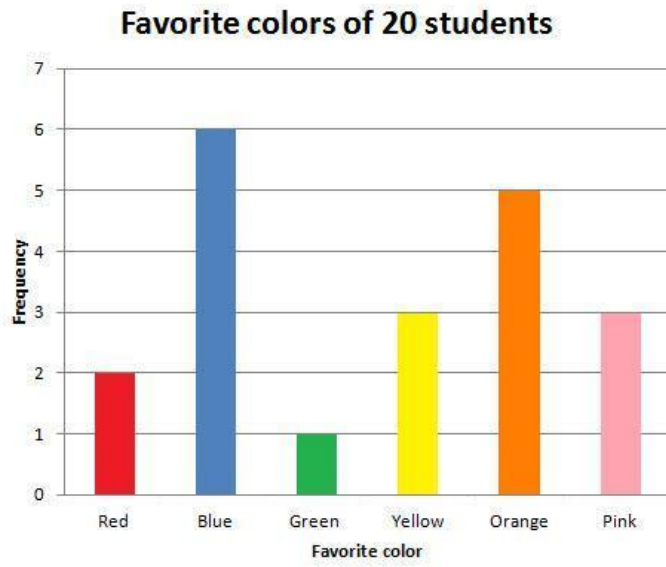
INSTRUCTIONS

1. Answer all questions.
2. Non-programmable calculators may be used.
3. Read the questions carefully before any attempts.
4. Only one attempt is allowed.
5. Leave your answers correct to 2 decimal places, unless otherwise stated

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1. Round 24,56 to 3 significant digits. (2)
 - A. 2,456
 - B. 24,5
 - C. 24,56
 - D. 24,6

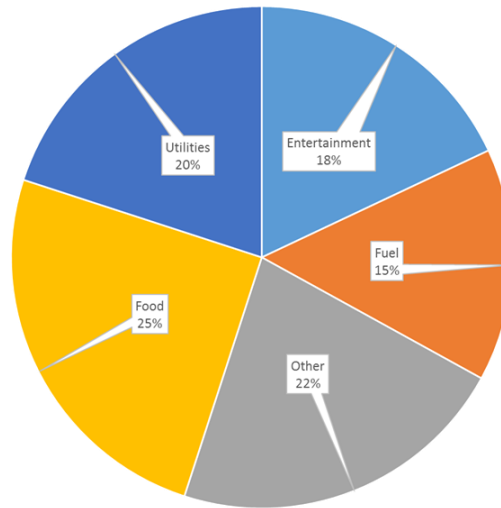
 2. Convert the decimal 8,064 to a percentage. (2)
 - A. 80,64%
 - B. 86,4%
 - C. 806,4%
 - D. 864%

3. The bar graph shows the favorite colors of 20 students in a class. How many more of them favored orange than those who favored green? (2)



- A. 2
B. 3
C. 4
D. 5
4. Which one of the following is NOT equivalent to $\frac{17}{8}$ (2)
- A. $2\frac{1}{8}$
B. $2\frac{3}{24}$
C. $\frac{34}{16}$
D. $\frac{36}{16}$
5. Jerry borrowed R4 000 for 5 years at 6% simple interest. Find the interest amount. (2)
- A. R800
B. R1 000
C. R1 200
D. R1 500

6. The pie chart below represents monthly expenditure of a household that totals R8 000. What is the expenditure for utilities? (2)



- A. R2 200
B. R1 600
C. R1 500
D. R444
7. The figure below represents a stem and leaf plot. What is the median value? (2)

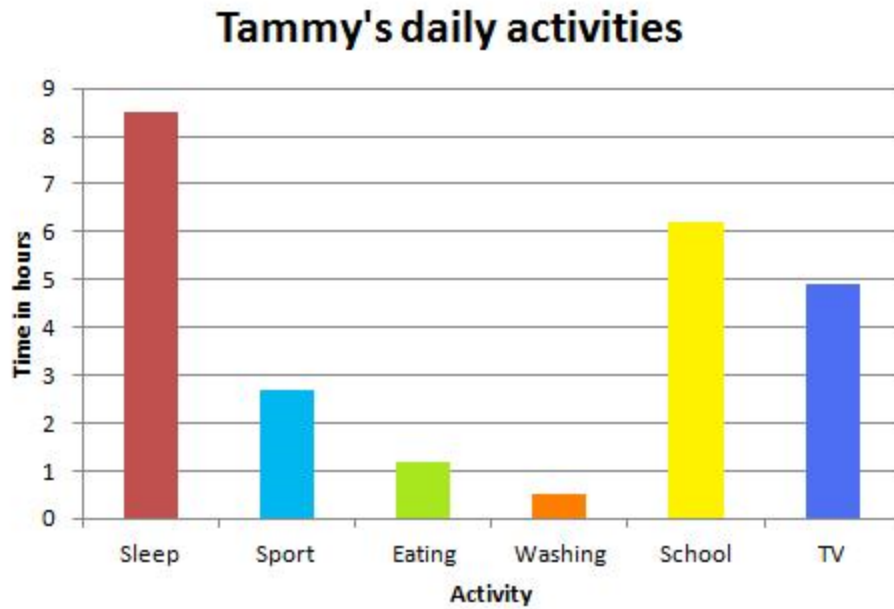
Stem	Leaf
1	0 1 1 5 9
2	1 3 6 7 8
3	0 1 3 3 3 6 7
4	2 3 5 5 7 9
5	3 4 8
7	1 7 9
8	4

- A. 29,5
B. 33
C. 34,5
D. 36

8. For the number 36,249 what is the place value of the digit 9? (2)
- A. Thousand
 - B. Thousandth
 - C. Tenth
 - D. Hundredth
9. The prefix 'deci' means (2)
- A. Ten
 - B. Tenth
 - C. Hundredth
 - D. Hundred
10. Express 1,35% as a fraction (2)
- A. $\frac{27}{200}$
 - B. $\frac{27}{2000}$
 - C. $\frac{29}{2000}$
 - D. $1\frac{7}{20}$
11. Subtract $1\frac{9}{10}$ from $4\frac{3}{5}$ (2)
- A. $2\frac{7}{10}$
 - B. $2\frac{3}{10}$
 - C. $-\frac{27}{10}$
 - D. $4\frac{1}{5}$
12. What is $\frac{15}{4} \div \frac{5}{9}$? (2)
- A. $2\frac{1}{12}$
 - B. $\frac{12}{25}$
 - C. $\frac{4}{27}$
 - D. $6\frac{3}{4}$

13.

(2)



Approximately what percentage of the day did Tammy spend on playing sport?

- A. About 8%
- B. About 11%
- C. About 15%
- D. About 27%

14. Last year the school roll was 1 400. This year it is 1 365. What is the percentage change? (2)

- A. 2,5% fall
- B. 2,564% fall
- C. 25% fall
- D. 35% fall

15. If $a = 6$ and $b = -2$, what is $\frac{a-b}{a+b}$? (2)

- A. $\frac{1}{2}$

- B. 1
- C. 2
- D. 4

16. A biscuit recipe uses flour, butter and sugar in the ratio 2:3:4. How much sugar do I need when I use 75g of butter? (2)

- A. 75g
- B. 50g
- C. 100g
- D. 150g

17. It takes 4 men 24 hours to build a wall. How long will it take 3 men working at the same rate to build the wall? (2)

- A. 18 hours
- B. 26 hours
- C. 28 hours
- D. 32 hours

18. Andile borrows R79 500 for 2 years and pays R10 017 simple interest. Calculate the interest rate (Simple interest: $I = Prt$). (2)

- A. 7%
- B. 6%
- C. 6,3%
- D. 5,3%

19. If price index of the current year with respect to the base year is 125, what does this mean? (2)

- A. 125% of prices increased in current year compared to the base year.
- B. Prices increased by 25% in the current year compared to the base year.
- C. Prices increased by 125% in the current year compared to the base year.
- D. 25% of prices increased in current year compared to the base year.

20. If the present value of my investment is R2,500 and the rate of interest is 2% compounded annually, what will the value be after 15 years? (2)

- A. R3 364,67
- B. R3 306,25
- C. R3 250
- D. R3 047,49

21. A booklet has 12 pages with the following numbers of words:
271, 354, 296, 301, 333, 326, 285, 298, 327, 316, 287 and 314

What is the median number of words per page? (2)

- A. 301
- B. 305,5
- C. 307,5
- D. 314

22. A camera originally sold for R999,99 and was marked down to sell for R699,99. Find the percent markdown based on the original price? (2)

- A. 42,86%
- B. 30,00%
- C. 70,00%
- D. 142,86%

23. Payless shoes marked up a pair of children's school shoes R20. If the rate of markup was 17,5% , what was the cost of the shoes? (2)

- A. R23,50
- B. R37,50
- C. R114,29
- D. R134,29

24. What extra number must be included in the following list of numbers to increase the median by 1? 16, 7, 24, 2, 11 (2)

- A. 18
- B. 14
- C. 13

D. 26

25. Find the cost of a jacket if the selling price is R249,95 and the percent of markup is 90% based on cost. (2)

- A. R474,91
- B. R159,95
- C. R224,96
- D. R131,55

26. For the numbers 13, 16, 12, 11, 8, 14, 12 and 18 which of the following is true? (2)

- A. median > mean > mode
- B. mean > mode > median
- C. mean > median > mode
- D. median > mode > mean

27. If each ticket of amusement park is sold for R20 then a family of 5 people is likely to pay (2)

- A. $R20(3) \div R20(2)$
- B. $R20(3) - R20(2)$
- C. $R20(3) \times R20(2)$
- D. $R20(2) + R20(3)$

28. The mean of two numbers is 10, and one number is 6 more than the other. What is the value of the smaller of the two numbers? (2)

- A. 8
- B. 6
- C. 7
- D. 9

29. Lucky Stores pays R238 for a chair and sells it for R495, 95. The mark-up % is: (2)

- A. 108,38%
- B. 48%
- C. 52,01%
- D. 208,38%

30. Which one of the following is discrete data? (2)

- A. The street is 45 km long.
- B. She weighs 75 kg.
- C. She has 30 teeth.
- D. She is 150 cm high.

31. The following data show the prices of four commodities in 2008 and 2010. Determine the simple average of price relatives for 2010 taking 2008 as the base year. (2)

Commodities	Bread	Maize meal	Sugar	Milk
Price in 2008(Rands)	7	12	9	12
Price in 2012(Rands)	11	17	15	19

- A. 66,67
- B. 55
- C. 155
- D. 155,95

32. What is the fifth number of the following 15; 10; 6; 3...? (2)

- A. -1
- B. 2
- C. 0
- D. 1

33. The following data show the prices of four commodities in 2008 and 2010. Determine the simple aggregate index for 2010 taking 2008 as the base year. (2)

Commodities	Bread	Maize meal	Sugar	Milk
Price in 2008(Rands)	7	12	9	12
Price in 2012(Rands)	11	17	15	19

- A. 66,67
- B. 55
- C. 155.
- D. 155,95

34. If $(-1)^1 = -1$ and $(-1)^2 = 1$, determine $(-1)^{999}$ (2)

- A. 1
- B. -1
- C. A very big number
- D. None of the above

35. Moore Motors buys at cost a truck for R400 000 and plans to sell it at a mark-up rate of 35%. How much would be the selling price of the truck, including VAT (15%)? (2)

- A. R62 100
- B. R600 000
- C. R540 000
- D. R621 000

36. If a necklace is bought for R2000 Rand and sold for y rands, then the profit is (2)

- A. $(2000y)$ Rand
- B. $(y - 2000)$ Rand
- C. $(2000 - y)$ Rand
- D. $(2000 + y)$ Rand

37. A sample collects information about: (2)

- A. Some, but not all, of the population.
- B. None of the population.
- C. All adult members of the population.
- D. All members of the population.

38. A dress was originally selling for R150. Due to changing styles the 1st markdown was 10 percent and the second markdown 20 percent. The dress still did not sell so a final markdown of 5 percent was applied. The sale price is currently: (2)

- A. R112,50
- B. R102,60
- C. R135,00
- D. R105,00

39. The following values are calculated in respect of marks of the students of Sections A and B of a Maths class: (2)

	Section A	Section B
Mean	85	92
Variance	81	64

The marks of which section have more variability?

- A. Section A
- B. Section B
- C. Both sections have equal variability
- D. Cannot be determined

40. The price of one tin of beans in 1999 was R12. The price index in year 2000, taking 1999 as the base year is 105. Find the price of one tin of beans in year 2000. (2)

- A. R12,60
- B. R12,00
- C. R14,80
- D. R12,80

41. Jim can run a mile in 5 minutes and 50 seconds. John can run a mile in 6 minutes and 40 seconds. What is the ratio of Jim's time to John's time? (2)

- A. 5.5 : 6.4
- B. 55 : 64
- C. 7 : 8
- D. 8 : 7

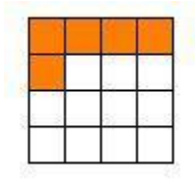
42. What is the sample standard deviation for the data given:

12, 13, 29, 18, 61, 35, 21

(2)

- A. 293,67
- B. 17,14
- C. 15,87
- D. 41,98

43. In the following diagram, what is the ratio of orange squares to white squares? (2)



- A. 11 : 5
- B. 5 : 11
- C. 5 : 16
- D. 16 : 5

44. Mrs. Carmendy's class had an average score of an 89. She forgot to add in a student who got a 10% on the test. How will this affect the class average? (2)

- A. Increase
- B. Decrease
- C. Stay the same
- D. Increase and decrease

45. Mrs. Carmendy's class had an average score of an 89. She forgot to add in a student who got a 10% on the test. How will this affect the class average? (2)

- A. Increase
- B. Stay the same
- C. Increase and then decrease
- D. Decrease

46. Two numbers are in the ratio 7: 9. If the sum of the numbers is 112, then the smaller number is: (2)

- A. 49
- B. 72
- C. 63
- D. 42

47. (2)

Stem	Leaf
1	2 3
2	0 1 5 5 8
3	4 6 9
5	3 4 4 4 6
6	2 5 6 6 7 8
8	0 3 5
9	8

What is the range for the above stem and leaf plot?

- A. 98
- B. 97
- C. 86
- D. 85

48. A teacher divides her class into 5 groups. She samples her class by selecting all students sitting in group 1 and group 5. This sampling technique is called? (2)

- A. Cluster
- B. Simple random
- C. Stratified
- D. Systematic

49. In drawing a histogram, which of the following suggestions should be followed? (2)

- A. Leave large gaps between bars. This allows room for comments.
- B. The heights of bars should equal the class frequency

- C. Generally, bars should be square so that both the height and width equal the class count
- D. The scale of the vertical axis should be that of the variable whose distribution you are displaying

50. Three children, aged 9, 11 and 12 receive a Christmas present of R1 280 from their aunt. They are told to divide the money between them in proportion to their ages. How much money will the second oldest child receive? (2)

- A. R380
- B. R480
- C. R440
- D. R510