



College of Business Peace Leadership and Governance

CSC 100 PROBLEM SOLVING

END OF FIRST SEMESTER EXAMINATIONS

NOVEMBER/DECEMBER 2018

LECTURER: Mr. Timothy Makambwa

DURATION: (3 HRS)

INSTRUCTIONS

1. Answer all questions in Section A and any *three* from Section B

2. Show all your workings

Section A(40 Marks)

Choose the Correct response/answer

1. If you started with \$25.00 and then spent \$3.00 to go to a movie, how much would you have left?

a. \$23.00 b. \$22.00 c. \$21.00 d. \$12.00

2. Which word is different from the other 3 words?

a. yell b. talk c. pencil d. whisper

3. Which letter is as far away from *K* in the alphabet as *J* is from *G*?

a. K b. M c. N d. G e. I

4. If you are facing east and turn left, then make an about-face and turn left again, in which direction are you facing?

a. east b. north c. west d. south e. southwest

5. Which pair of words fits best in the blanks?

Arm is to wrist as _____ is to _____.

a. leg: foot b. thigh: ankle c. leg: ankle d. leg:knee

6. 20 is related to 30 as 10 is related to _____?

a. 5 b. 25 c. 60 d. 15 e. 10

7. Which set of letters is different from the other 3 sets?

a. EFGE b. BCDB c. KLML d. OPQO

8. In a different language *liro cas* means "red tomato," *dum cas dan* means "big red barn" and *xer dan* means "big horse." What is the word for *barn* in this language?

a. dum b. liro c. cas d. dan e. xer

9. There are 3 separate, equal-size boxes, and inside each box there are 2 separate small boxes, and inside each of the small boxes there are 4 even smaller boxes. How many boxes are there altogether?

a. 24 b. 13 c. 21 d. 33 e. some other number

10. Ten full crates of walnuts weigh 410 lb, while an empty crate weighs 10 lb. How much do the walnuts alone weigh?

a. 400 lb b. 390 lb c. 310 lb d. 320 lb e. 420 lb

11. One number in the series below is incorrect. What should that number be?

3 4 6 9 13 18 24 33

a. 33 b. 7 c. 24 d. 31 e. 32

12. Which pair of words best fits the meaning of the sentence?

_____ the dog was big, he was _____ heavy.

a. Since not b. Although very c. Although not d. Because nevertheless

13. An orthopaedist is a _____ specialist.

a. brain b. heart c. ear and throat d. lung e. bone

14. An equivocal statement is _____.

a. relevant b. equivalent c. credible d. somewhat loud e. ambiguous

15. Three empty cereal boxes weigh 9 ozs and each box holds 11 ozs of cereal. How much do 2 full boxes of cereal weigh together?

a. 20 ozs b. 40 ozs c. 14 ozs d. 28 ozs e. 15 ozs

16. A journey always involves a _____?

a. person b. destination c. distance d. preparation

17. In how many days of the week does the third letter of the day's name immediately follow the first letter of the day's name in the alphabet?

a. 1 b. 2 c. 3 d. 4 e. 5

18. Which pair of words is different from the other 3 pairs?

a. walk slowly b. speak loud c. read book d. lift quickly

19. Which number is repeated first in the following series?

5 9 4 8 2 3 6 1 7 4 7 6 7 8 9 1 5 2 3 5 8 9 5 3 5 4 3 7 1

a. 7 b. 8 c. 6 d. 4 e. 5

20. Which pair of words fits best in the blanks?

Oven is to *bake* as _____ is to _____.

a. automobile: carry b. dishwasher: dishes c. food: ice d. vacuum cleaner: rug

SECTION B (60 Marks)

Answer any three Questions from this Section

21.

a) Betty is shorter than Sally. Cynthia is taller than Sally. Carla is shorter than Betty. Is Sally shorter or taller than Carla?

b) John is faster than Pete. Dave is faster than Harvey. Dave is slower than Pete. Which man is fastest and which is slowest?

c) . If Bob and Fred are both taller than Tom, while Hal is taller than Bob but shorter than Fred, which man is tallest and which is second tallest?

d) . Gladys is a teacher, Sally a truck driver, Violet a crane operator, and Hannah a Hollywood stuntwoman. The truck driver is heavier than Hannah. The crane operator is lighter than the stuntwoman. Gladys is heavier than the truck driver. Which woman is heaviest and which is lightest?

22.

a) You are facing east, you turn to face the opposite direction, and then you turn 90% left. Which direction is now on your left side?

b) A train left city *A* at 9:35 and arrived at city *B* 5 hours and 40 minutes later. What time did it arrive at city *B*?

c) Belvedere Street is parallel to St. Anthony Street. Davidson Street is perpendicular to River Street. River Street is parallel to St. Anthony Street. Is Davidson Street parallel or perpendicular to Belvedere?

d) In the town of Pottsville, streets with names that begin with a vowel and end with a consonant run north-south. Those which begin with a consonant and end with a vowel run

east-west. Others may run either way. If Carter Street is perpendicular to Agnes Street, is it parallel or perpendicular to Sheridan Street, which runs north-south?

For all the above scenarios show all your reasoning or working.

23.

- a) Make a Venn diagram with 3 circles showing the following relationships. Some x are y. No x are z. No y are z.
- b) Make a Venn diagram with 3 circles showing the following relationships. Some x are y. Some x are z. No y are z.
- c) Make a Venn diagram showing the relationships between cats, animals, and cars, using one circle to represent cats, another to represent animals, and a third to represent cars.
- d) Make a Venn diagram showing the relationships between cats, dogs, and animals.

24.

- a) If some of Totteville's residents have brown eyes and some of Totteville's residents are women, is the statement "Some of Totteville's residents are brown-eyed women" true, false, or unsubstantiated?
- b) For this problem, assume the first two statements are correct and make a diagram to represent the relationships.* Then answer the questions. All bears are butterflies. All bees are bears.
 - a. Can you be certain that all bees are butterflies?
 - b. Can you be certain that all butterflies are bees?
- c) The fire department wants to send booklets on fire hazards to all teachers and homeowners in town. How many booklets does it need, using these statistics? Use a Venn diagram in solving this problem.

Homeowners	50,000
Teachers	4,000
Teachers who own their homes	3,000

25.

- a). Bob, Juanita, Ted, and Aretha together have a total income of \$1,100 a week, of which \$210 is made by Bob. Bob and Juanita together make \$500 a week, while Bob and Ted together make \$530. How much do Juanita and Aretha make together?
- b). Three women Pat, Joan, and Mary have between them a total of 30 dresses of which 15 are cotton and the rest are either wool or synthetic fibre. Pat has 3 cotton dresses and 3 synthetics. Mary, who has a total of 8 dresses, has 4 cotton dresses. Pat has the same number of wool dresses as Mary has cotton dresses. Joan has as many wool dresses as Pat has cotton dresses. And Mary also has as many wool dresses as Pat has cotton dresses. How many total dresses does Joan have? (Show the table completely filled in.)
- c) Four lawn care fanatics, Fred, John, Alice, and Nina between them own 86 grass cutting devices consisting of shears, string trimmers, and power mowers. Fred likes to be close to his work, so he owns 8 shears and 13 string trimmers, but no mower. John is just the opposite. He prefers to stay as far from the work as possible and therefore owns only power mowers, 33 in all!

Alice is an all-around gardener who owns 5 shears, 8 power mowers, and various string trimmers. Nina, a woman of many talents, has a total of 15 implements, among which are 3 shears and 5 string trimmers. Interestingly, the four fanatics own more than twice as many mowers as string trimmers, 48 mowers in all. How many string trimmers does Alice own?

.26.

- a) In this problem the "first quarter of the year" means January, February, and March. The "second quarter" is April, May, and June, and so on.

Acme Realtors sold 23 houses during the first quarter of the year and again during the last quarter. Sales during the middle two quarters were not quite as good, so that the annual sales total was 57 houses. B & B Realty company sold 50 houses during the second quarter and half that many during the fourth quarter, for a total annual sales of 75 houses. Arco sold as many houses during the third quarter as B & B sold during the entire year, but during the other three quarters they did no better than B & B during the first quarter. Together the three companies sold 79 houses during the third quarter. How many total houses did the three companies sell during the second quarter?

- b) John, Harry, and Phil are married to Sally, Nancy, and Arlene, but not necessarily in that order. John, who is Sally's brother, has five children. Nancy, who is a certified public accountant, wants to wait several years before starting a family. Harry is married to John's sister. Who is Phil married to?

- c) Judy, Celia, and Betty are a math teacher, a truck driver, and a housewife, but not necessarily in that order. Judy can't drive and is married to the brother of the math teacher. Celia is the best friend of the truck driver. Betty had a bad experience with math in grade school and has avoided all contact with math since then. What is each woman's occupation?

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