S6 Home Economics Practice Paper: Nutrition and Energy Calculation, Meal Planning and Menu Design, Food Safety and Preservation, Textiles and Clothing Construction, Family Resources and Finance, Consumer Education and Healthy Living

S6 | Home Economics | Time: 75 minutes | Total: 100 marks | 24 questions

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Part A: Nutrition and Energy Calculation (16 marks)

Give energy in kcal and show the working.

1. A breakfast contains 60 g carbohydrate, 20 g protein and 15 g fat. Using the energy factors 4, 4 and 9 kcal/g, find its total energy. [4]

Answer: Answer: 455 kcal (60x4 + 20x4 + 15x9 = 240 + 80 + 135).

2. A person needs 2,000 kcal a day and fat should supply at most 30% of total energy. Find the daily fat limit in grams. [4]

Answer: Answer: 66.7 g (2000 x 0.30 / 9).

3. A person is 1.70 m tall and weighs 68 kg. Find the BMI and state the category. [4]

Answer: Answer: 23.5 (68 / 1.70^2), within the normal range of 18.5 to 22.9.

4. At 0.8 g of protein per kg of body weight, how much protein does a 55 kg person need each day? [4]

Answer: Answer: 44 g (55 x 0.8).

Part B: Meal Planning and Menu Design (16 marks)

Give ratios and portions in simplest form.

5. A lunch provides 600 kcal and the person needs 2,000 kcal a day. Find the percentage of daily energy supplied by this lunch. [4]

Answer: Answer: 30% (600 / 2000 x 100).

6. A recipe for three people uses 250 g of rice. How much rice is needed for five people? (nearest gram) [4]

Answer: Answer: 417 g (250 x 5 / 3 = 416.7).

7. A food costs $48 per kilogram. How much do 750 g cost? [4]

Answer: Answer: $36 (48 x 0.75).

8. The daily fibre recommendation is 25 g. If a person eats three portions of vegetables (6 g fibre each) and two portions of fruit (4 g fibre each), how much fibre is taken and is the target met? [4]

Answer: Answer: 26 g (3x6 + 2x4), so the 25 g recommendation is met.

Part C: Food Safety and Preservation (16 marks)

Give all temperatures in degrees Celsius.

9. The food danger zone is 4 to 60 degrees Celsius. Find the width of this zone. [4]

Answer: Answer: 56 degrees (60 - 4).

10. A freezer is set at -18 degrees and a refrigerator at 4 degrees. Find the difference. [4]

Answer: Answer: 22 degrees (4 - (-18)).

11. Leftovers must be reheated to a core temperature of 75 degrees; it now reads 68 degrees. How many more degrees are needed? [4]

Answer: Answer: 7 degrees (75 - 68).

12. To make a 1 to 99 bleach solution for sanitising a chopping board, how much water must be added to 10 ml of bleach? [4]

Answer: Answer: 990 ml (10 x 99), giving 1,000 ml of solution in total.

Part D: Textiles and Clothing Construction (16 marks)

Show the formula used in each calculation.

13. A piece of fabric is 120 cm long before washing and 114 cm after washing. Find the shrinkage percentage. [4]

Answer: Answer: 5% ((120 - 114) / 120 x 100).

14. One garment needs 1.8 m of fabric. How much fabric is needed for 12 garments? [4]

Answer: Answer: 21.6 m (1.8 x 12).

15. A 5 kg blended fabric is 65% cotton and 35% polyester. Find the mass of cotton. [4]

Answer: Answer: 3.25 kg (5 x 0.65).

16. A pattern is 40 cm long and 1.5 cm seam allowance is added at each end. Find the cutting length. [4]

Answer: Answer: 43 cm (40 + 1.5 x 2).

Part E: Family Resources and Financial Management (16 marks)

Give amounts in dollars and show the working.

17. A family earns $32,000 a month and spends 30% on housing. Find the monthly housing cost. [4]

Answer: Answer: $9600 (32,000 x 0.30).

18. A savings goal of $24,000 is met by saving $2,000 a month. How many months are needed? [4]

Answer: Answer: 12 months (24,000 / 2,000).

19. A 1,200 W appliance is used 2 hours a day for 30 days. Find the energy used in kWh and the cost at $1.2 per kWh. [4]

Answer: Answer: 72 kWh (1.2 x 2 x 30), costing $86.4.

20. A food comes in two packs: 750 g for $36 and 1,200 g for $52.8. Find the price per 100 g and state which is cheaper. [4]

Answer: Answer: $4.8 and $4.4 per 100 g, so the 1,200 g pack is cheaper.

Part F: Consumer Education and Healthy Living (20 marks)

Read the nutrition label and show the calculation.

21. A drink has 12 g of sugar per 100 g and the pack is 250 g. Find the sugar per pack and its percentage of the 50 g daily free-sugar limit. [5]

Answer: Answer: 30 g of sugar (12 / 100 x 250), which is 60% of the limit.

22. A snack has 480 mg of sodium per 100 g and a pack weighs 150 g. Find the sodium per pack and its percentage of the 2,000 mg daily limit. [5]

Answer: Answer: 720 mg (480 / 100 x 150), which is 36% of the limit.

23. Jogging for 30 minutes burns 300 kcal and the person jogs three times a week. If 1 kg of fat equals 7,700 kcal, how many weeks are needed from this exercise alone? [5]

Answer: Answer: 8.6 weeks (7,700 / 900 = 8.56).

24. A pack of 5 apples costs $30 while single apples cost $7 each. How much is saved by buying the pack, and what is the average price per apple? [5]

Answer: Answer: save $5, averaging $6 each (30 / 5).
