S5 Home Economics Practice Paper 2: Diet Planning and Nutrient Needs, Food Cost, Portions and Waste, Sewing and Knitting Skills, Appliance Energy Efficiency, Food Safety and Labels, Family Finance and Insurance

S5 Home Economics | Time allowed: 90 minutes | Total: 100 marks | 24 questions

A. Diet Planning and Nutrient Needs (18 marks)

Energy is taken as 4 kcal per gram of carbohydrate and protein, and 9 kcal per gram of fat.

1. Breakfast contains 50 g of oats (32 g carbohydrate, 6 g protein, 4 g fat) and 250 ml of milk (12 g carbohydrate, 8 g protein, 8 g fat). Find the total energy of the breakfast in kcal and the percentage of that energy supplied by fat. (5 marks)

2. She needs 2 000 kcal a day. Find the breakfast energy as a percentage of the daily requirement. (4 marks)

3. Lunch has 150 g chicken breast (31 g protein), one egg (6.5 g protein) and 100 g tofu (8 g protein). Find the total protein at lunch and its percentage of the daily requirement (0.9 g per kg of body mass, body mass 55 kg). (5 marks)

4. State two ways to increase dietary fibre in a Chinese diet, giving one food example for each. (4 marks)

B. Food Cost, Portions and Waste (17 marks)

All prices are in dollars; give answers to one or two decimal places.

5. A family buys 500 g pork at 88 dollars per kg, 400 g vegetables at 24 dollars per kg and 300 g rice at 12 dollars per kg. Find the total food cost and the cost per person for four people. (5 marks)

6. The original recipe serves four and uses 500 g of pork. For ten servings, find the scaling factor and the mass of pork needed. (4 marks)

7. A household buys 1.8 kg of food and throws away 0.45 kg. Find the waste percentage. If an estate of 800 households produces 0.6 kg of food waste per household per day, find the annual waste in tonnes (365 days). (4 marks)

8. State two practical ways to reduce food waste at the buying and storage stages. (4 marks)

C. Sewing and Knitting Skills (16 marks)

The sewing machine sews 900 stitches per minute.

9. A 60 cm seam needs 4 stitches per centimetre. Find the total number of stitches and the time in seconds to sew the seam at 900 stitches per minute. (4 marks)

10. A jumper needs 450 g of yarn. Each 50 g ball costs 38 dollars. Find the number of balls needed and the yarn cost. (4 marks)

11. The knitting gauge is 22 stitches per 10 cm. For a chest width of 50 cm, find the number of stitches to cast on. (4 marks)

12. Compare knitted and woven fabric in elasticity and use, giving one example each. (4 marks)

D. Appliance Energy Efficiency (17 marks)

Electricity is charged at 1.3 dollars per kWh.

13. A 2 000 W oven runs 1.5 hours a day. Find the daily energy use in kWh, the use over 30 days and the monthly cost. (5 marks)

14. An energy label grade 1 refrigerator saves 260 kWh a year over the old model, costs 5 200 dollars and the old one sells for 400 dollars. Find the annual saving and the payback period in years. (4 marks)

15. Two appliances run for 4 hours at 1 200 W and 800 W. Find the difference in energy used and the percentage saved by the lower-power one. (4 marks)

16. State two practical ways to improve energy efficiency at home and explain the principle behind each. (4 marks)

E. Food Safety and Labels (16 marks)

Assume bacteria double every 30 minutes at 25 degrees Celsius.

17. Food stands at room temperature for 4 hours. By what factor does the number of bacteria increase? (4 marks)

18. A drink contains 12 g of sugar per 100 ml and is sold in 30 ml packs. Find the sugar per pack and its percentage of the 50 g daily sugar limit. (4 marks)

19. Explain the difference between a best-before date and a use-by date, giving one suitable food for each. (4 marks)

20. State three practices that prevent cross-contamination between raw and cooked food. (4 marks)

F. Family Finance, Insurance and Consumption (16 marks)

Monthly income and spending are in dollars.

21. A family earns 32 000 dollars a month and spends 11 200 on rent, 6 400 on food, 2 400 on transport and 4 000 on other items. Find the total monthly spending, the monthly saving and the saving rate. (5 marks)

22. A home insurance policy has an excess of 1 500 dollars. If a burglary causes a loss of 12 000 dollars, find the amount the insurer pays. (4 marks)

23. An item sells for 7 200 dollars and can be paid in 12 instalments of 650 dollars. Find the total paid, the interest and the interest rate relative to the cash price. (4 marks)

24. State two practical ways to compare prices before buying. (3 marks)