S5 Home Economics Practice Paper

S5 | Home Economics | Time: 75 minutes | Total: 100 marks | 24 questions

---

Part 1 Nutritional Needs and Diet-related Diseases (17 marks)

Read each case, show your working and answer.

1. A woman weighs 65 kg. Her basal metabolic rate is estimated as 0.9 x body weight (kg) x 24 hours and her physical activity level is 1.55. Find her BMR and her total daily energy expenditure.

2. An adult man is 1.72 m tall and weighs 78 kg. Calculate his BMI and state his weight category.

3. A person takes 2,100 kcal a day with protein supplying 15% of energy. Find the daily protein intake in grams and comment on its adequacy against a reference of 0.8-1.0 g per kg body weight.

4. Three meals supply 1,200 mg, 1,500 mg and 900 mg of sodium. Find the total sodium, convert it to grams of salt (sodium x 2.54 / 1000) and compare with the 5 g daily limit.

Part 2 Therapeutic Diet Design (17 marks)

The questions concern diabetic, low-sodium and special-need diets.

5. A diabetic patient needs 2,000 kcal a day and the dietitian sets carbohydrate at 45% of energy, the rest coming from protein and fat. Find the daily carbohydrate allowance in grams.

6. A dish uses 20 ml of soy sauce containing 5,700 mg sodium per 100 ml. Find the sodium and the equivalent grams of salt, then suggest one way to reduce it.

7. A vegetarian needs 60 g of protein a day, with 40% from legumes and the rest from cereals. Find the protein from each group and explain protein complementation.

8. The iron reference intake for adult women is 18 mg a day and rises to 27 mg in pregnancy. Find the percentage increase and name two iron-rich foods.

Part 3 Textile Fibres and Garment Selection (17 marks)

The questions cover fabric cost, fibre properties and care labels.

9. A uniform needs 2.4 m of main fabric at $68 per metre, 0.6 m of lining at $45 per metre and $180 of tailoring. Find the cost and the selling price with a 20% mark-up.

10. Cotton has a moisture regain of about 8.5% and polyester about 0.4%. Find the ratio and explain what this means for close-fitting summer clothing.

11. A cotton top uses 0.35 kg of cotton yarn at $96 per kg; a polyester top uses 0.28 kg at $52 per kg. Find both material costs and the difference.

12. A care label shows: maximum wash 40 degrees C, do not bleach, tumble dry low, iron at medium heat. Explain what each instruction protects.

Part 4 Fashion Design and Cultural Influence (17 marks)

The questions concern colour planning, production cost and cultural elements.

13. A 24-piece collection uses a main colour for 50%, a secondary colour for 33% and an accent for the remainder. Find the number of pieces in each group as whole numbers.

14. A dress costs $4,800 to sample, $135 in material and $85 in labour per piece, with a first run of 100 pieces. Find the total and the average cost per piece.

15. A fast-fashion top sells for $120 and is worn about 7 times; a durable design sells for $480 and is worn about 30 times. Find the cost per wear and comment on which choice is more sustainable.

16. A designer wants to print an indigenous people traditional motif on a commercial range. Explain the difference between cultural appropriation and appreciation, and give two responsible practices.

Part 5 Family Resources, Savings and Investment (16 marks)

The questions concern deposits, emergency funds, inflation and saving rate.

17. $80,000 is placed in a fixed deposit at 3.2% per year compounded annually for 2 years. Find the maturity value and the interest earned.

18. A family spends $14,500 a month and the adviser recommends 6 months of expenses as an emergency fund. Find the fund size and say where it should be held.

19. With inflation at 3% a year, find the purchasing power of $100 after 10 years (2 decimal places) and explain the implication for savers.

20. A family earns $22,000 and spends $14,500 a month. Find the saving rate and suggest three ways to raise it.

Part 6 Consumer Rights and Green Consumption (16 marks)

The questions cover water use, energy labels, warranty rights and carbon footprint.

21. Making one cotton T-shirt uses about 2,700 L of water. A person buys 12 a year: find the annual virtual water use and suggest two ways to reduce it.

22. A washing machine rated 1,200 W runs 1.2 hours per wash, 5 times a week, with electricity at $1.2 per kWh. Find the weekly energy use and the annual cost over 52 weeks.

23. An appliance has a 12-month warranty and fails through no fault of the user in month 14. State the consumer rights that may apply and the action to take.

24. The same jacket has a carbon footprint of 1.2 kg CO2e if made locally and 14 kg CO2e if flown in. Find the ratio and explain why.
