S5 Health Management and Social Care Practice Paper: Concepts of Health, Nutrition and Energy, Mental Health and Stress, Family Relationships, Community Health and Policy, Health Promotion and Evaluation

S5 | Health Management and Social Care | Time: 75 minutes | Total: 100 marks | 24 questions

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Part A - Concepts of Health and Determinants of Health (16 marks)

Show all working and units; answer concept questions in full sentences.

1. A student is 1.70 m tall and weighs 68 kg. Calculate the BMI (to 1 decimal place) and state the formula used. [4]

Answer: BMI = weight / height squared = 68 / 2.89 = 23.5.

2. A 68 kg person uses 4.2 kJ per kg per hour at rest. Calculate the 24-hour basal energy expenditure in kJ. [4]

Answer: 68 x 4.2 x 24 = 6,854.4 kJ.

3. A student exercises 3 times a week for 45 minutes each time. Find the weekly total and compare it with the recommended 150 minutes. [4]

Answer: 3 x 45 = 135 minutes a week, which is 15 minutes short of the recommendation.

4. Teenagers are advised to sleep 8 hours a night; a student sleeps only 6 hours 15 minutes. Find the nightly and weekly sleep deficit. [4]

Answer: Short by 1.75 hours per night, i.e. 1.75 x 7 = 12.25 hours per week.

Part B - Nutrition, Energy and Food Components (17 marks)

Show working and units in all calculations; add a brief explanation to each answer.

5. The daily free-sugar limit is 50 g. A drink contains 12 g of free sugar. Find its percentage of the daily limit. [4]

Answer: 12 / 50 x 100% = 24%.

6. 1 g of table salt contains about 400 mg of sodium. A person takes 2,000 mg of sodium a day; find the equivalent grams of salt. [4]

Answer: 2,000 / 400 = 5 g of salt.

7. A person takes in 1,800 kcal and uses 2,100 kcal a day. Find the daily and weekly energy deficit and estimate weekly weight loss at 7,700 kcal per kg. [4]

Answer: Daily deficit 300 kcal, weekly 2,100 kcal; 2,100 / 7,700 is about 0.27 kg.

8. A student takes 450, 650, 700 and 200 kcal from three meals and a snack, against a target of 1,800 kcal. Find the total intake, the excess and the excess percentage, then suggest one improvement. [5]

Answer: Total 2,000 kcal, excess 200 kcal, i.e. 200 / 1,800 x 100% = 11.1%; cut a high-sugar snack or reduce portions by 200 kcal.

Part C - Mental Health and Stress Management (17 marks)

Show working in calculations; support application answers with concrete examples.

9. A stress scale has 8 items scored 0 to 3; a person scores 19. Find the maximum total, the percentage score and judge the stress level. [5]

Answer: Maximum 24; 19 / 24 x 100% = 79.2%, a high level that calls for early help.

10. A 16-year-old does moderate exercise. Estimate maximum heart rate as 220 minus age and find the 60% to 80% target zone. [4]

Answer: Maximum 204; 60% = 122.4 and 80% = 163.2 beats per minute, so the target is about 122 to 163 bpm.

11. A relaxation method uses 4 seconds in, 7 seconds hold, 8 seconds out. Find one cycle and the total for 4 cycles. [4]

Answer: One cycle is 19 seconds; 4 cycles take 76 seconds.

12. A student studies 5 days a week for 9 hours a day and exercises 7 times a week for 30 minutes. Find the weekly study hours and exercise time as a percentage of study time. [4]

Answer: Study 45 hours; exercise 3.5 hours, i.e. 3.5 / 45 x 100% = 7.8%.

Part D - Family and Interpersonal Relationships (16 marks)

Answers must be practical; write a sample dialogue where communication skills are required.

13. A family of four eats together 5 times a week. Find the monthly number of shared meals (4 weeks) and state two benefits for family health. [4]

Answer: 20 shared meals a month; benefits include better communication, stronger support and improved diet (any two).

14. Write a short I-message dialogue expressing dissatisfaction and name its three elements. [4]

Answer: Example: "When you take loud calls late at night (behaviour), I cannot fall asleep (feeling); I would like messages after 11 pm (request)." The three elements are behaviour, feeling and request.

15. A carer provides 20 hours of care a week and uses 4 hours of respite service. Find the percentage of care time covered by respite and explain its purpose. [4]

Answer: 4 / 20 x 100% = 20%; respite lets carers rest, reduces burnout and sustains care quality.

16. A teenager spends 4.5 hours a day on screens. Find the weekly screen time and suggest two practical ways to reduce it. [4]

Answer: 4.5 x 7 = 31.5 hours a week; methods include setting daily limits, a screen-free hour before bed, or replacing screen time with exercise (any two).

Part E - Community Health and Health Policy (17 marks)

Show working in calculations; relate policy answers to the Hong Kong context.

17. A screening test detects 190 of 200 true cases and correctly reports 760 of 800 healthy people as normal. Find the sensitivity and specificity. [4]

Answer: Sensitivity 190 / 200 x 100% = 95%; specificity 760 / 800 x 100% = 95%.

18. A consultation costs $420, medicine $180 and tests $350, with a 60% government subsidy. Find the total cost and the patient payment. [4]

Answer: Total $950; the patient pays 950 x 40% = $380.

19. A community health programme invites 1,200 residents and 480 attend. Find the attendance rate and the number to invite for 3,000 attendances. [5]

Answer: Attendance 480 / 1,200 x 100% = 40%; invite 3,000 / 40% = 7,500 people.

20. Influenza vaccination coverage rises from 35% to 47%. Find the percentage-point rise and the relative increase, then state one benefit of higher coverage. [4]

Answer: A 12 percentage-point rise; relative increase 12 / 35 x 100% = 34.3%; benefits include fewer severe cases, fewer outbreaks and lower health care burden.

Part F - Health Promotion and Programme Evaluation (17 marks)

Show working with units; in evaluation answers state one limitation of the data.

21. A person has an 84 cm waist and 100 cm hips. Find the waist-to-hip ratio and judge whether it reaches the male high-risk level of 0.90 or above. [4]

Answer: 84 / 100 = 0.84, below 0.90, so not high risk.

22. A person smokes 20 cigarettes a day; a pack of 20 costs $78. Find the cigarettes per year and the yearly spending. [4]

Answer: 20 x 365 = 7,300 cigarettes a year, i.e. one pack a day; 365 x 78 = $28,470 a year.

23. A reading is 142/94 mmHg. Using the rule that a systolic reading of 140 or above, or a diastolic reading of 90 or above, indicates hypertension, judge the reading and give two lifestyle suggestions. [4]

Answer: Systolic 142 is at least 140 and diastolic 94 is at least 90, so this is hypertension and needs confirmation; suggestions include less salt, regular exercise, weight control or quitting smoking (any two).

24. Participants in a health promotion programme average 62 before and 74 after. Find the gain and the relative increase, then state one limitation of a simple before-and-after comparison. [5]

Answer: A gain of 12 marks, i.e. 12 / 62 x 100% = 19.4%; limitations include no control group and test-retest effects, so causation is not established.