S6 Health Management and Social Care Practice Paper: Health Belief Model and levels of prevention, incidence and SMR, BMI and energy balance, stress and mental health screening, long-term care continuum, cost-effectiveness and herd immunity (100 marks)

Level: S6 | Subject: Health Management and Social Care | 75 minutes | 100 marks | 24 questions | question paper

Section A: Health concepts and health promotion (16 marks)

Name the concept and give an example; a name without an example scores no mark.

#	Question	Marks
1	List the four main factors in the Health Belief Model that affect whether a person takes preventive action, and give one example of each for an S6 student receiving a flu vaccination.	4
2	Explain the three levels of prevention and give one example of each that is relevant to S6 students.	4
3	State the five action areas of the Ottawa Charter for health promotion, and explain how a school could implement two of them.	4
4	A community has 25,000 people; 5,000 smoked before an intervention and 4,000 smoked two years later. (a) Calculate the smoking rate before and after. (b) Calculate the relative decline in the smoking rate to one decimal place.	4

Section B: Epidemiology and data use (16 marks)

Show the formula, substitution and unit; state rates per 1,000 or per 100,000.

#	Question	Marks
5	A district records 300 new cases in one year with a mid-year population of 15,000. Calculate the incidence rate and explain why epidemiology often uses person-years as the denominator.	4
6	A city of 60,000 people records 120 deaths in a year. (a) Calculate the crude death rate. (b) Explain why age-standardised death rates should be used when comparing two cities.	4
7	A screening test is used on 1,000 people: 180 of the 200 with the disease test positive, and 760 of the 800 without it test negative. Calculate sensitivity and specificity and state the public health use of a highly sensitive test.	4
8	For a given operation a hospital expects 50 deaths but records 65. Calculate the standardised mortality ratio (SMR) and explain whether a value above 100 always means poor care.	4

Section C: Nutrition, body weight and lifestyle (17 marks)

Give answers to one decimal place and use the classification standard applied in Hong Kong.

#	Question	Marks
9	An S6 male student is 1.60 m tall and weighs 64 kg. (a) Calculate his BMI. (b) Classify his weight status using the Asian adult cut-offs applied in Hong Kong.	4
10	A 40-year-old man weighs 70 kg and is 175 cm tall. Using Mifflin-St Jeor (male: 10 x weight in kg + 6.25 x height in cm - 5 x age + 5), calculate his basal metabolic rate and estimate daily	4

	total energy expenditure with an activity factor of 1.55.	
11	One kilogram of fat provides about 7,700 kcal. Calculate the daily energy deficit needed to lose 0.5 kg of fat per week.	4
12	A drink contains 12 g of sugar per 100 g and one serving is 40 g. (a) Calculate the sugar per serving. (b) With a 2,000 kcal diet and an added sugar limit of 10% of energy, calculate the percentage of the daily limit in one serving and comment on drinking three servings a day.	5

Section D: Stress, mental health and social support (17 marks)

Identify the limiting factors in the case and suggest workable support measures.

#	Question	Marks
13	Describe the three stages of the general adaptation syndrome and state the health effects of staying in the resistance stage for a long time.	4
14	State the recommended sleep duration for adolescents and adults, and explain how too little sleep affects body weight and mood.	4
15	PHQ-9 is a common depression screening tool. (a) State its total score range. (b) State the score bands for its five severity levels. (c) Explain why a high score is not a diagnosis.	4
16	Case: Mrs Chan alone cares for her husband, who has limited mobility after a stroke, while working and raising two children. She now cannot sleep, cries often and refuses visits from friends. (a) Identify which types of social support she lacks. (b) Suggest three specific support measures and explain what each does.	5

Section E: Long-term care and community support services (17 marks)

Use the service continuum to justify transfer from home to residential care.

#	Question	Marks
17	Use the service continuum to describe the three tiers of long-term care from home to residential care, and state common reasons for moving from one tier to the next.	4
18	An older adult holds a monthly community care service voucher worth $8,000; the service costs $100 per hour and 120 hours are needed each month. (a) Calculate the hours the voucher buys. (b) Calculate the shortfall in hours and the shortfall as a percentage of need to one decimal place.	4
19	In a district 1,200 older people apply for subsidised residential places and 300 places exist. (a) Calculate the ratio of applicants to places. (b) Explain why community care must still be developed during the wait.	4
20	Describe the four main steps of case management and, using the discharge of an older stroke patient, explain why discharge planning must start while the patient is still in hospital.	5

Section F: Health care system, cost-effectiveness and environmental health (17 marks)

Compare both cost and outcome, and note the limits of the decision.

#	Question	Marks
21	Compare the roles of primary, secondary and tertiary care with one example each, and explain why strengthening primary care relieves pressure on hospitals.	4

22	Programme A costs $500,000 for 10 QALYs; programme B costs $300,000 for 8 QALYs. Calculate the incremental cost-effectiveness ratio (ICER) and explain how it is used when resources are limited.	4
23	An infectious disease has an R0 of 3. (a) Calculate the minimum vaccination coverage needed for herd immunity. (b) Explain why a higher coverage is usually needed in practice.	4
24	A tap water sample from an estate contains 15 micrograms of lead per litre against a standard of 10 micrograms per litre. (a) Calculate the percentage exceedance. (b) State the main health effects of lead exposure in children and suggest three remedial measures.	5

TutorZone - original practice paper. Time allowed: 75 minutes. Total: 100 marks.