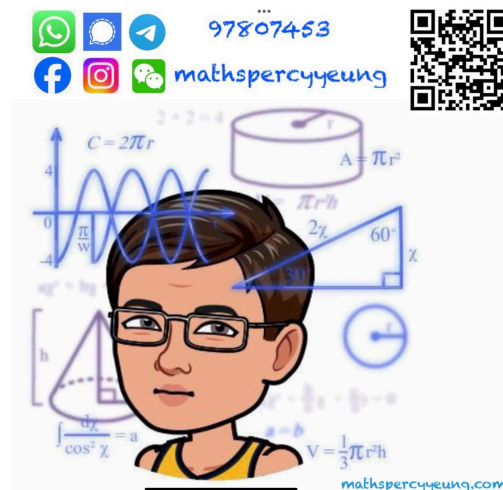


F.6 Mathematics

MC Exercise

6-4 Uses and Abuses of Statistics

1. Which of the following is an advantage of conducting a census?
 - A. Save money
 - B. Save time
 - C. Save manpower
 - D. All data can be considered
2. Which of the following statistical surveys **CANNOT** be conducted by census?
 - A. A survey to investigate the sales volumes of a brand of smartphones in different models in a shop last month.
 - B. A survey to investigate the weights of the school bags of a class of students.
 - C. A survey to investigate the average daily rainfall in August this year.
 - D. A survey to investigate the audience rating of a television programme.
3. If a survey is to be conducted to investigate the opinions of the students of a school on the use of Putonghua for the teaching of Chinese Language, which of the following is an example of probability sampling?
 - A. 10 students are selected at random from each form of the school to have an interview.
 - B. The first 20 students who arrive at the school on a randomly selected school day are interviewed.
 - C. A pile of questionnaires is put in each classroom for students to fill in on a voluntary basis.
 - D. The class monitor of each class of the school is interviewed.
4. If a survey is to be conducted to investigate the opinions of the customers on the service provided by a restaurant, which of the following is / are the example(s) of convenience sampling?
 - I. The first 20 customers leaving the restaurant on a randomly selected day are interviewed.
 - II. A suggestion box is set up for customers to express their opinions.
 - III. 10 regular customers of the restaurant are interviewed.
 - A. I only
 - B. I and III only
 - C. II and III only
 - D. I, II and III
5. All 360 students of a cookery course are numbered from 1 to 360. To investigate the opinions of the students on the time arrangement of the course, an integer k is selected at random from 1 to 12 and 30 students with the numbers $k, k+12, k+24$, etc. are selected to form a sample. If the integer selected is 8, what is the number of the last student to be selected?
 - A. 344
 - B. 348
 - C. 352
 - D. 356



6. A batch of calculators is packed into 8 boxes, with 40 calculators in each box. If 5% of the calculators are selected from the batch for testing, what are the sizes of the population and the sample?

	Size of the population	Size of the sample
A.	40	2
B.	320	16
C.	320	40
D.	320	64

7. A survey is to be conducted to investigate the times spent by the students of a school on revision before the examination. Which of the following can form representative sample(s)?

- I. All students in a randomly selected class.
- II. All S3A students.
- III. All students aged 12.

- A. I only
- B. II only
- C. I and III only
- D. II and III only

8. A class teacher is going to investigate the number of late arrivals of students in a day. Which of the following is/are suitable data collection method(s)?

- I. Interview
- II. Reading records
- III. Observation

- A. I only
- B. II only
- C. I and III only
- D. II and III only

9. Which of the following surveys **CANNOT** collect data through observation?

- A. A survey to investigate the daily number of trucks parking in a car park.
- B. A survey to investigate the traffic condition of a road.
- C. A survey to investigate the daily number of patients being sent to the Accident and Emergency department of a hospital.
- D. A survey to investigate the number of tourists from Australia on each cable car.

10. For which of the following surveys would questionnaire be an appropriate tool for data collection?

- A. A survey to investigate the number of customers in a bookstore each hour.
- B. A survey to investigate the number of pedestrians using a lift besides a footbridge each day.
- C. A survey to investigate the amounts of the monthly pocket money of the students in a class.
- D. A survey to investigate the voter turnout rate in a Legislative Council election.

11. Which of the following questions is most appropriately designed?

- A. Most people think that the government should reduce the fuel tax. Do you agree?
- B. The government has a huge surplus now. Do you think the government should reduce the fuel tax?
- C. Do you disagree that the government should not reduce the fuel tax?
- D. Do you think the government should reduce the fuel tax?

12. Which of the following questions is most appropriately designed?

A.

Your height is
A. 140 cm B. 150 cm
C. 160 cm D. 170 cm
E. 180 cm

B.

Your height is
A. < 150 cm B. < 160 cm
C. < 170 cm D. < 180 cm
E. > 180 cm

C.

Your height is
A. < 150 cm
B. 150 cm - 160 cm
C. 160 cm - 170 cm
D. 170 cm - 180 cm
E. > 180 cm

D.

Your height is
A. < 150 cm
B. 150 cm - 159 cm
C. 160 cm - 169 cm
D. 170 cm - 179 cm
E. > 179 cm

13. Vincy is going to conduct a survey to investigate the travel frequencies of local people. Which of the following questions is most relevant to the objective of the survey?

- A. Have you been travelling recently?
- B. Do you travel every month?
- C. How often do you travel?
- D. When did you travel last time?

14. To investigate whether local people agree to the share of housework by husbands, a women's programme invited audience to call in and express their opinions. After the line was connected, they could press '1' to vote for or press '2' to vote against the idea. No personal information was required to be input. 20 telephone responses were received in the women's programme. Which of the following are the weaknesses of this sampling method?

- I. Not all local people can express their opinions.
- II. The respondents may vote more than once.
- III. The sample size is too small.

- A. I and II only
- B. I and III only
- C. II and III only
- D. I, II and III