

## Sample entrance test for the MS Development Studies: Development, Technology, and Policy program at ITU.



### Instructions

- This sample test has of four sections which includes Quantitative reasoning, Information technology, Development policy, and Verbal reasoning. All these sections are designed to test the basic knowledge of applicants in these areas.
- Answer key of each of the section is provided at the end of the test.
- This sample test is only for the purpose of introducing the test to potential students, so there may be some errors or typos in it.
- In this sample test you are provided with a framework of what the test questions and structure will look like.

## Section 1: Quantitative Reasoning

Select one option for each of the question in this section.

Q1. If the area of certain square (expressed in square meters) is added to its parameter (expressed in meters), the sum is 77. What is the length of the side of square?

- a. 11, -7
- b. -11, 7
- c. 11, -8
- d. -11, 8

Q2.  $(3 + \sqrt{8})(3 - \sqrt{8}) =$

- a. 1
- b. 2
- c. 3
- d. 4

Q3. Given that  $x^2 - 10x + 25 = 16$ , what is x?

- a. 9
- b. 1
- c. Either a or b
- d. None

Q4. If  $(x + 3)^2 = 225$ , which of the following could be the value of  $x - 1$ ? (5lb pg 313 11)

- a. 13
- b. 12
- c. -12
- d. -16
- e. -19

Q5. If  $2a = 4b = 8c = 10$ , then  $64abc =$  (5lb pg 320 53)

- a. 64,000
- b. 16,000
- c. 8,000
- d. 4,000
- e. 1,000

Q6. Which of the following inequalities is equivalent to  $|m + 2| < 3$ ? (5lb pg 347 51)

- a.  $m < 5$
- b.  $m < 1$
- c.  $-5 < m < 5$

- d.  $m > -1$
- e.  $-5 < m < 1$

Q7. The number of years it would take for the value of an investment to double, at 26% interest compounded annually, is approximately: (5lb pg 382 69)

- a. 2
- b. 3
- c. 4
- d. 5
- e. 6

Q8.5  $\frac{5}{12}$  of all the students are girls and  $\frac{1}{4}$  of all the students are girls who take Spanish. What fraction of the girls take Spanish? (5lb pg 413 12)

- a.  $\frac{5}{48}$
- b.  $\frac{5}{12}$
- c.  $\frac{2}{5}$
- d.  $\frac{3}{5}$
- e.  $\frac{7}{12}$

Q9. If Ken's salary were 20% higher, it would be 20% less than Lorena's. If Lorena's salary is \$60,000, what is Ken's salary? (5lb pg 446 2)

- a. \$36,000
- b. \$40,000
- c. \$42,500
- d. \$42,850
- e. \$45,000

Q10. Raymond borrowed \$450 at 0% interest. If he pays back 0.5% of the total amount every 7 days, beginning exactly 7 days after the loan was disbursed, and has thus far paid back \$18, with the most recent payment made today, how many days ago did he borrow the money? (5lb pg 449 23)

- a. 6
- b. 8
- c. 25
- d. 42
- e. 56

Q11. If a number is increased by 20%, decreased by 15%, and increased by 7%, the overall percent change is closest to a: (5lb pg 450 28)

- a. 2% decrease
- b. 2% increase
- c. 9% increase
- d. 12% increase
- e. 14% increase

Q12. A chemist is mixing a solution of acetone and water. She currently has 30 ounces mixed, 10 of which are acetone. How many ounces of acetone should she add to her current mixture to attain a 50/50 mixture of acetone and water if no additional water is added? (5lb pg 454 54)

- a. 2.5
- b. 5
- c. 10
- d. 15
- e. 20

Q13. If 35% of  $x$  equals 140, what is 20% of  $x$ ? (5lb pg 455 62)

- a. 9.8
- b. 39.2
- c. 80
- d. 320
- e. 400

Q14. How many factors greater than 1 do 120, 210, and 270 have in common? (5lb pg 491 9)

- a. 1
- b. 3
- c. 6
- d. 7
- e. 30

Q15. If  $3 \cdot 29 \cdot 2 = 3 \cdot x$ , what is  $x$ ? (5lb pg 514 7)

- a. 2
- b. 3
- c. 4
- d. 5
- e. 6

Q16. For what positive integer is the square of the integer divided by the cube root of the integer equal to nine times the integer? (5lb pg 516 15)

- a. 4
- b. 8
- c. 16
- d. 27
- e. 125

Q17. If a taxi charges \$8.00 for the first mile, and \$1.00 for each additional quarter mile, how much does the taxi charge for a 4.5 mile ride? (5lb pg 562 1)

- a. \$16.00
- b. \$18.00
- c. \$22.00

- d. \$24.00
- e. \$26.00

Q18. Eva meditates for 20 minutes at a time, with a 5-minute break in between sessions. If she begins meditating at 10:10, what time will it be when she completes her third session? (5lb pg 563 7)

- a. 11:20
- b. 11:25
- c. 11:50
- d. 11:55
- e. 12:25

Q19. Of the 24 children in a classroom, 12 are boys. Which of the following is the ratio of boys to girls in the classroom? (5lb pg 660 5)

- a. 1 : 1
- b. 1 : 2
- c. 2 : 1
- d. 1 : 3
- e. 3 : 1

Q20. The average of four numbers is 12. If the set of numbers includes 9, 11, and 12, what is the fourth number? (5lb pg 699 7)

- a. 12
- b. 14
- c. 16
- d. 20
- e. 24

## Section 2: Information Technology

Select one option for each of the question in this section.

Q1. Guns of color present in a computer color screen are:

- a. 2
- b. 3
- c. 4
- d. 5

Q2. In computer terminology, OCR stands for:

- a. Optical Character Reader
- b. Optical Card Reader
- c. Office Cash receiver
- d. Online Computer Retrieval

Q3. In computer, testing of a program's component is called:

- a. Pilot testing
- b. Isolation testing
- c. System testing
- d. Unit testing

Q4. Form of information that is written as a phrase or sentence is termed as

- a. Message
- b. Data
- c. Text
- d. Character

Q5. Data entered computer through keyboard and mouse is an example of

- a. Instruction
- b. Command
- c. Indirect input
- d. Direct input

Q6. Computer hardware consists of

- a. I/O devices
- b. Storage devices
- c. CPU
- d. All above

Q7. Scanner incorporates a special sort of camera which is made up of

- a. Sensor
- b. Chip
- c. Laser light
- d. Charged coupled device.

Q8. Key of the keyboard which is used to get back to the beginning of a document is called:

- a. ECS key
- b. End key
- c. F12 key
- d. Home key

Q9. In information technology, LCD stands for:

- a. Liquid Crystel Display
- b. Low-Cost Display
- c. Local Current Directory
- d. Liquid Cathode Display

Q10. Computer mouse is an essential part of:

- a. Software
- b. Hardware

- c. CPU
- d. Motherboard

### Section 3: Development and Policy

Q1. Which of the following are not third-world regions?

- a. Latin America.
- b. Asia.
- c. Africa.
- d. Australia.

Q2. Which of the following countries are not newly industrialized countries (NICs)?

- a. Taiwan.
- b. North Korea.
- c. Singapore.
- d. Hong Kong.

Q3. In which of the following countries would you expect material lifestyles to be most like those in the United States?

- a. Nigeria.
- b. Japan.
- c. India.
- d. Mali.

Q4. If GDP for Barbados is \$260 million in 2005 and its population is 260, 000, GDP per capita is:

- a. 1000
- b. 260
- c. 0.001
- d. 259740

Q5. Economic growth from current year (c) to previous year (p) is given by:

- a.  $[(GDP_c - GDP_p) / GDP_p] * 100$
- b.  $[(GDP_c - GDP_p) * GDP_p] * 100$
- c.  $GNP_c - (GDP_p * 100)$

d.  $[\text{GDP}_p - \text{GDP}_c] * 100$

Q6. Economic development refers to:

- a. economic growth.
- b. economic growth plus changes in output distribution and economic structure.
- c. improvement in the well-being of the urban population.
- d. sustainable increases in Gross National Product.

Q7. 12. If GNP per capita at constant prices for Ghana is US\$360 and US\$364 in 1996 and 1997 respectively, the real economic growth from 1996 to 1997 is

- a. 4%
- b. 1.11%
- c. 0.011%
- d. 11%

Q8. As economic development proceeds, income inequality tends to follow a(n) \_\_\_\_\_ curve:

- a. convex.
- b. inverted U-shaped.
- c. L-shaped.
- d. S-Shaped.

Q9. Increases in real GNP per capita occur when

- a. government programs direct resources away from investment goods to consumer goods.
- b. tariffs and quotas prevent countries from trading and thus prevent dollars from leaving each country.
- c. the rate of growth in real GNP is greater than the rate of growth in the population.
- d. the level of consumption expenditures rises relative to the level of saving.

Q10. What is gross domestic product (GDP)?

- a. income earned through foreign exchange.
- b. the number of dollars earned in industry.
- c. income earned within a country's boundaries.
- d. goods received from the nation's local residents.

Q11. Industrialization

- a. causes development.
- b. is positively related to development.
- c. is inversely related to development.
- d. inhibits development.

Q12. Which of the following was not a classical economist?

- a. Adam Smith.
- b. Thomas R. Malthus.
- c. John Stuart Mill.
- d. John Maynard Keynes.

Q13. Which of the following is not a consequence of growing agricultural commercialization?

- a. An increase in the number of landless laborers.
- b. An increase in rural poverty.
- c. Women gain in decision making power.
- d. Workers' nutrition is reduced.

Q14. 3. In a production function  $Y = F(L, K, N, E, T)$ , Y is

- a. national product.
- b. capital.
- c. natural resources.
- d. prevailing technology.

Q15. A production function:

- a. shows the dependency output of the working population.
- b. depicts the relationship between input and output.
- c. states the relationship between products and income distribution.
- d. is a function of natural resources in a country.

Q16. In a competitive economy, a worker earns an income equivalent to

- a. the amount of brain drain.

- b. marginal utility.
- c. marginal product.
- d. the substitutability of labor to capital.

Q17. Which of the following is not a natural public monopolies?

- a. mobile phone.
- b. electricity.
- c. water supply.
- d. postal service.

Q18. Capitalism is an economic system:

- a. based on government intervention in the means of production.
- b. that originated in the United States in the 19th century.
- c. where private owners of capital make decisions based on profit.
- d. that dominated developing economies in the 19<sup>th</sup> century.

Q19. By using fiscal policy, i.e. varying \_\_\_\_\_ and/or \_\_\_\_\_, governments achieve goals for output and employment growth as well as price stability.

- a. demand-pull inflation, tax elasticity.
- b. interest rates, financial liberalization
- c. interest rates, tax rates.
- d. tax rates, government spending.

Q20. If people with higher incomes pay a higher percentage of income in taxes, the income tax structure is:

- a. progressive.
- b. regressive.
- c. value-added taxes (VAT).
- d. excise taxes.

## Section 4: Verbal Reasoning

Select one entry for each blank from the list of options given for each question. Fill in the blank in the way that best completes the text.

Q1. On an aptitude test in 1986, an argument posited that the possibility of conducting banking transactions from home was as likely as flying cars, an argument that today sounds \_\_\_\_\_.

(5lb pg 49 7)

- a. prescient
- b. Paradoxical
- c. presumptuous
- d. Preposterous
- e. Pithy

Q2. In Europe, football, otherwise known as soccer, is the most popular sport by several orders of magnitude, whereas in America, fandom is fairly evenly \_\_\_\_\_ among a few different sports.

(5lb pg 48 1)

- a. Regarded
- b. inspired
- c. enjoyed
- d. measured
- e. apportioned

Q3. Napoleon is of course most famous for his military triumphs, but his innovative code of law had a subtler but more \_\_\_\_\_ impact, as its principles strongly influenced legal codes well into the 20th century. (5lb pg 49 8)

- a. renowned

- b. enduring
- c. fleeting
- d. Insidious
- e. Martial

Q4. Although it does contain some pioneering ideas, one would hardly characterize the work as \_\_\_\_\_. (ets verbal reasoning pg 31 1)

- a. orthodox
- b. eccentric
- c. original
- d. trifling
- e. conventional

Q5. It was her view that the country's problems had been \_\_\_\_\_ by foreign technocrats, so that to ask for such assistance again would be counterproductive. (ets verbal reasoning pg 31 2)

- a. ameliorated
- b. ascertained
- c. diagnosed
- d. exacerbated
- e. overlooked

For each of Questions 1 to 9, select one answer choice unless otherwise directed.

Question 6 and 7 are based on passage bellow:

Ragwort was accidentally introduced to New Zealand in the late nineteenth century and, like so many invading foreign species, quickly became a pest. By the 1920s, the weed was rampant. What made matters worse was that its proliferation coincided with sweeping changes in agriculture and a massive shift from sheep farming to dairying. Ragwort contains a battery of toxic and resilient alkaloids: even honey made from its flowers contains the poison in dilute form. Livestock generally avoid grazing where ragwort is growing, but they will do so once it displaces grass and clover in their pasture. Though sheep can eat it for months before showing any signs of illness, if cattle eat it, they sicken quickly, and fatality can even result.

Q6. The passage suggests that the proliferation of ragwort was particularly ill-timed because it:

- a. coincided with and exacerbated a decline in agriculture.
- b. took place in conditions that enabled the ragwort to spread faster than it otherwise would have done.
- c. led to an increase in the number of toxic compounds contained in the plants.
- d. prevented people from producing honey that could be eaten safely.
- e. had consequences for livestock that were more dramatic than they otherwise would have been.

Q7. The passage implies which of the following about the problem's ragwort poses to dairy farmers?

- a. Milk produced by cows that eat ragwort causes illness in humans who drink it.
- b. Ragwort can supplant the plants normally eaten by cattle.

- c. Cattle, unlike sheep, are unable to differentiate between ragwort and healthy grazing.

Despite the fact that the health-inspection procedures for catering establishments are more stringent than those for ordinary restaurants, more of the cases of food poisoning reported to the city health department were brought on by banquets served by catering services than were brought on by restaurant meals.

Q8. Which of the following, if true, helps explain the apparent paradox in the statement above?

- a. A significantly larger number of people eat in restaurants than attend catered banquets in any given time period.
- b. Catering establishments know how many people they expect to serve, and therefore are less likely than restaurants to have, and serve, leftover food, a major source of food poisoning.
- c. Many restaurants provide catering services for banquets in addition to serving individual meals.
- d. The number of reported food-poisoning cases at catered banquets is unrelated to whether the meal is served on the caterer's or the client's premises.
- e. People are unlikely to make a connection between a meal they have eaten and a subsequent illness unless the illness strikes a group who are in communication with one another.

Question 9 and 10 are based on the passage below:

African American newspapers in the 1930s faced many hardships. For instance, knowing that buyers of African American papers also bought general-circulation papers, advertisers of consumer products often ignored African American publications. Advertisers' discrimination did free the African American press from advertiser domination. Editors could print politically charged material more readily than could the large national dailies, which depended on advertisers' ideological approval to secure revenues. Unfortunately, it also made the selling price of Black papers much higher than that of general-circulation dailies. Often as much as two-thirds of publication costs had to come from subscribers or subsidies from community politicians and other interest groups. And despite their editorial freedom, African American publishers often felt compelled to print a disproportionate amount of sensationalism, sports, and society news to boost circulation.

The passage suggests that if advertisers had more frequently purchased advertising in African American newspapers, then which of the following might have resulted?

- a. African American newspapers would have given more attention to sports and society news than they did.
- b. African American newspapers would have been available at lower prices than large national dailies were.
- c. African American newspapers would have experienced constraints on their content similar to those experienced by large national dailies.

Q10. The author of the passage suggests which of the following about the "advertisers" (line 3) mentioned in the passage?

- a. They assumed that advertising in African American newspapers would not significantly increase the sales of their products.
- b. They failed to calculate accurately the circulation of African American newspapers.

- c. They did not take African Americans' newspaper reading into account when making decisions about where to advertise.
- d. They avoided African American newspapers partly because of their sensationalism.
- e. They tried to persuade African American newspapers to lower the rates charged for advertising.

Years ago, consumers in Frieland began paying an energy tax in the form of two Frieland pennies for each unit of energy consumed that came from non-renewable sources. Following the introduction of this energy tax, there was a steady reduction in the total yearly consumption of energy from non-renewable sources.

Q11. If the statements in the passage are true, then which of the following must be true based on them? There was a steady decline in the yearly revenues generated by the energy tax in Frieland.

- a. There was a steady decline in the total amount of energy consumed each year in Frieland.
- b. There was a steady increase in the use of renewable energy sources in Frieland.
- c. The revenues generated by the energy tax were used to promote the use of energy from renewable sources.
- d. The use of renewable energy sources in Frieland greatly increased relative to the use of non-renewable energy sources.

Question 12, 13, and 14 are based on the passage below:

In a plausible but speculative scenario, oceanographer Douglas Martinson suggests that temperature increases caused by global warming would not significantly affect the stability of the Antarctic environment, where sea ice forms on the periphery of the Line continent in the autumn and winter and mostly disappears in the summer. True, less sea ice would form in the winter because global warming would cause temperatures to rise. However, Martinson argues, the effect of a warmer atmosphere may be offset as follows. The formation of sea ice causes the concentration of salt in surface waters to increase; less sea ice would mean a smaller increase in the concentration of salt. Less salty surface waters would be less dense and therefore less likely to sink and stir up deep water. The deep water, with all its stored heat, would rise to the surface at a slower rate. Thus, although the winter sea-ice cover might decrease, the surface waters would remain cold enough so that the decrease would not be excessive.

Q12. It can be inferred from the passage that which of the following is true of the surface waters in the current Antarctic environment?

- a. They are more affected by annual fluctuations in atmospheric temperatures than they would be if they were less salty.
- b. They are less salty than they would be if global warming were to occur.
- c. They are more likely to sink and stir up deep waters than they would be if atmospheric temperatures were to increase.
- d. They can offset some of the effects of global warming beyond the Antarctic region.
- e. They are less affected by the temperature of deep water than they would be if atmospheric temperatures were to increase.

Q13. The passage suggests that Martinson believes which of the following about deep waters in the Antarctic region.

- a. They rise to the surface more quickly than they would if global warming were to occur.
- b. They store heat that will exacerbate the effects of increases in atmospheric temperatures.
- c. They would be likely to be significantly warmed by an increase in atmospheric temperatures.
- d. They would be saltier than they currently are if global warming were to occur.
- e. They are less likely to be stirred up when surface waters are intensely salty than when surface waters are relatively un-salty.

Q14. According to the passage, which of the following is true about the sea ice that surrounds the Antarctic continent?

- a. The amount of sea ice that forms in the winter has been declining.
- b. Most of the sea ice that forms in the winter remains intact in the summer.
- c. Even small changes in the amount of sea ice dramatically affect the temperature of the surface waters.
- d. Changes in the amount of sea ice due to global warming would significantly affect the stability of the Antarctic environment.
- e. Changes in the amount of sea ice affect the degree of saltiness of the surface waters.

## Answer Key

### Section1

Question	Correct Answer
Q1	B
Q2	A
Q3	C
Q4	E
Q5	E
Q6	E
Q7	B
Q8	D
Q9	B
Q10	E
Q11	C
Q12	C
Q13	C
Q14	D
Q15	E
Q16	D
Q17	C
Q18	A
Q19	A
Q20	C

### Section 2

Question	Correct Answer
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Q1	B
Q2	B
Q3	D
Q4	A
Q5	C
Q6	D
Q7	C
Q8	D
Q9	A
Q10	B

### Section 3

Question	Correct Answer
Q1	D
Q2	B
Q3	B
Q4	A
Q5	A
Q6	B
Q7	B
Q8	B
Q9	C
Q10	C
Q11	D
Q12	D
Q13	C
Q14	A
Q15	B
Q16	C
Q17	A
Q18	C
Q19	B
Q20	A

### Section 4

Question	Correct Answer
Q1	D
Q2	E
Q3	B
Q4	C
Q5	D
Q6	E
Q7	B

Q8	E
Q9	C
Q10	A
Q11	A
Q12	C
Q13	A
Q14	E

Sample Test