

## DUAT Sample Questions

- **Please note that only a few sample questions have been provided for each section. The actual number of questions in each section will be more. Please refer to the DUAT syllabus for the break-up**
- **There will be 1/4<sup>th</sup> negative marks for each wrong answer**

### GENERAL APTITUDE

Select the most appropriate word from the options against each number for the following sentence:

Man has been tampering (1) the Ecosphere for a very long time and is forced to see that the environmental resources are (2) environmental problems are (3) social problems.

Q1.

- A. To
- B. In
- C. With
- D. For

Q2.

- A. Plenty
- B. Scarce
- C. Minute
- D. Enough

Q3.

- A. Really
- B. Coldly
- C. Badly
- D. Happily

Study the given paragraph carefully and answer the questions:

Seven persons A, B, C, D, E, F and G are watching movies on different days of the week (starting on Monday and ending on Sunday) not necessarily in the same order. B is going to watch movie on Tuesday. F is going to watch movie on adjacent day of B. There are three days gap between the days on which F and A are going to watch movie. G is going to watch movie just after D. There are as many persons are watching movie between A and G, same as between D and C. C is watching movie before D but not just before.

Q4. Who among the following is going to watch the movie on Wednesday?

- A. B
- B. C
- C. F
- D. E

Q5. Who among the following person is going to watch movie just after A?

- A. C
- B. D
- C. F
- D. G

Q6. Which of the following symbols should replace the sign (@) and (%) respectively in the given expression in order to make the expression  $L \geq U$  and  $R > J$  definitely true?

$L \geq K \geq P = N = J @ U \leq A \% R$

- A.  $\leq, =$
- B.  $\leq, \leq$
- C.  $>, \leq$
- D.  $=, <$

### ENGLISH

**Directions for questions (1-2):** Read the following passage carefully and choose the best answer to each question out of the four alternatives.

Despite their fierce reputation, Vikings may not have always been the plunderers and pillagers popular culture imagines them to be. In fact, they got their start trading in northern European markets, researchers suggest.

Combs carved from animal antlers, as well as comb manufacturing waste and raw antler material has turned up at three archaeological sites in Denmark, including a medieval marketplace in the city of Ribe. A team of researchers from Denmark and the U.K. hoped to identify the species of animal to which the antlers once belonged by analyzing collagen proteins in the samples and comparing them across the animal kingdom, Laura Geggel reports for LiveScience. Somewhat surprisingly, molecular analysis of the artifacts revealed that some combs and other material had been carved from reindeer antlers.... Given that reindeer (*Rangifer tarandus*) don't live in Denmark, the researchers posit that it arrived on Viking ships from Norway. Antler craftsmanship, in the form of decorative combs, was part

of Viking culture. Such combs served as symbols of good health, Geggel writes. The fact that the animals shed their antlers also made them easy to collect from the large herds that inhabited Norway. Since the artifacts were found in marketplace areas at each site it's more likely that the Norsemen came to trade rather than pillage. Most of the artifacts also date to the 780s, but some are as old as 725. That predates the beginning of Viking raids on Great Britain by about 70 years. (Traditionally, the so-called "Viking Age" began with these raids in 793 and ended with the Norman conquest of Great Britain in 1066.) Archaeologists had suspected that the Vikings had experience with long maritime voyages [that] might have preceded their raiding days. Beyond Norway, these combs would have been a popular industry in Scandinavia as well. It's possible that the antler combs represent a larger trade network, where the Norsemen supplied raw material to craftsmen in Denmark and elsewhere.

- 1) What does the passage mainly discuss?
  - a) the evidence of the trade relations of Vikings with Europe
  - b) the presence of reindeer antler combs in Denmark
  - c) the craft skills of Vikings using animal antlers
  - d) the presence of reindeer antler combs in Denmark
  
- 2) The word 'plunder and pillage' in the passage refers to
  - a) robbery by force
  - b) beastly behaviour
  - c) uncultured
  - d) lack of skill

### MATHEMATICS

- 1) Suppose A is a  $3 \times 3$  scalar matrix with a determinant equal to 8. What is the value of the diagonal element  $A(3,3)$ ?
  - a) 4
  - b) 1
  - c) 2
  - d) 8
  
- 2) Simplify  $(x+y)^2+(x-y)^2$ 
  - a)  $2x^2+2y^2$
  - b)  $x^2+y^2$

- c)  $2xy$
- d)  $4xy$

3) Suppose we flip a biased coin twice and count the number of heads that occur. If the probability of occurrence of head is  $\frac{3}{4}$ , what is the probability of occurrence of exactly one head?

- a)  $\frac{1}{2}$
- b)  $\frac{1}{4}$
- c)  $\frac{3}{4}$
- d)  $\frac{3}{8}$

### **MTech COMPUTER SCIENCE**

1) Which of the following are the most important features of functional programming languages?

- a) Immutable data structures
- b) Statements with side effects
- c) Iterative control structures
- d) Implicit type definition

2) Which is true of languages that employ dynamic typing?

- a) Type errors are not caught at all
- b) At different times, variables can contain values with different types
- c) Types are inferred by the compiler, so they don't need to be written down
- d) Lists are required to contain elements all having the same type

### **MTech ELECTRONICS**

1) 4-bit 2's complement representation of a decimal number is 1101. The number is

- a) -2
- b) 3
- c) 7
- d) 1

2) Decimal 42 in Hexadecimal and Binary number system is respectively

- a) 2A, 01010101
- b) C2, 00101000
- c) 2A, 00101010
- d) C2, 01010101

### **MSc COMPUTER SCIENCE**

- 1) A computer has a clock cycle of 150MHz. How many basic operations can this computer perform in one second?
  - a) 1.33 million
  - b) 1.33 billion
  - c) 150 billion
  - d) 150 million
  
- 2) A memory word is defined by
  - a) the size of the data path between the CPU and memory.
  - b) the "width" of the memory.
  - c) the size of the target datum in the machine.
  - d) the size of the general registers in the machine.

### **MSc ECOLOGY**

- 1) At what latitude and during what season is the daily averaged insolation at the top of the atmosphere the greatest?
  - a) Equator at equinox
  - b) South Pole on Jan 21
  - c) South Pole on Dec 21
  - d) North Pole on June 21
  
- 2) The Maxwell first equation is known as
  - a) Gauss law
  - b) Newton's law
  - c) Coulomb's law
  - d) Kepler's law