

## Annex 3 – Written Tests

### **MOTIVATION LETTER – (50%)**

Motivation Letter is used to measure candidates' ability to describe their future aspirations, educational and career plans in writing in the form of an essay. Candidates are expected to cover all the points raised and respond to the questions asked.

Candidates are expected to write approximately 800-900 words. The time allocated for writing the motivation letter is 60 minutes. Candidates are recommended to spend around 10-15 minutes planning their answers.

### **VERBAL NUMERICAL and VISUAL-SPATIAL TEST (VNVS TEST) – (50%)**

Verbal Numerical and Visual-Spatial Test is a general ability test that measures critical reasoning through short verbal, numerical and visual-spatial sub-tests and is used widely to predict the ability to work with words, numbers, images and logic.

VNVS test is designed to assess your ability in two broad dimensions, **quantitative** and **qualitative** reasoning;

**The Quantitative Reasoning is your** ability to use numbers and mathematical concepts to solve mathematical problems. as well as your ability to analyse data presented in a variety of ways. **The Qualitative Reasoning** is your ability in expressing conceptual knowledge such as the physical system structure, causality, start and end of processes, assumptions and conditions under which facts are true. Briefly **quantitative reasoning is inferential** whereas **qualitative reasoning is interpretive**. These two broad dimensions can be divided into several sub-dimensions as seen in **Figure 1** below.

VNVS Test consists of three dimensions: **Verbal Numerical and Visual-Spatial**. It is a multiple choice test where the candidate chooses from five alternatives (a.b.c.d.e). In total there are 45 **questions** in the test, 15 **in each dimension**. Candidates have **35 minutes** for the test. **It is rare for a candidate to complete all 45 questions** in such a short period of time, but the speed with which a candidate completes questions accurately is a factor in how high they score. **There is no penalty for wrong answers.**

#### **PLEASE NOTE THAT**

- **Candidates will mark their answers ON THE ANSWER SHEET ONLY NOT ON THE QUESTION PAPER.**
- **No extra time will be given to applicants to transfer their answers from the question paper to the answer sheet.**

- Both the question paper and the answer sheet must be returned to the test invigilators.
- Only answer sheets will be marked.
- The number of correct answers will determine the raw score of the candidate.

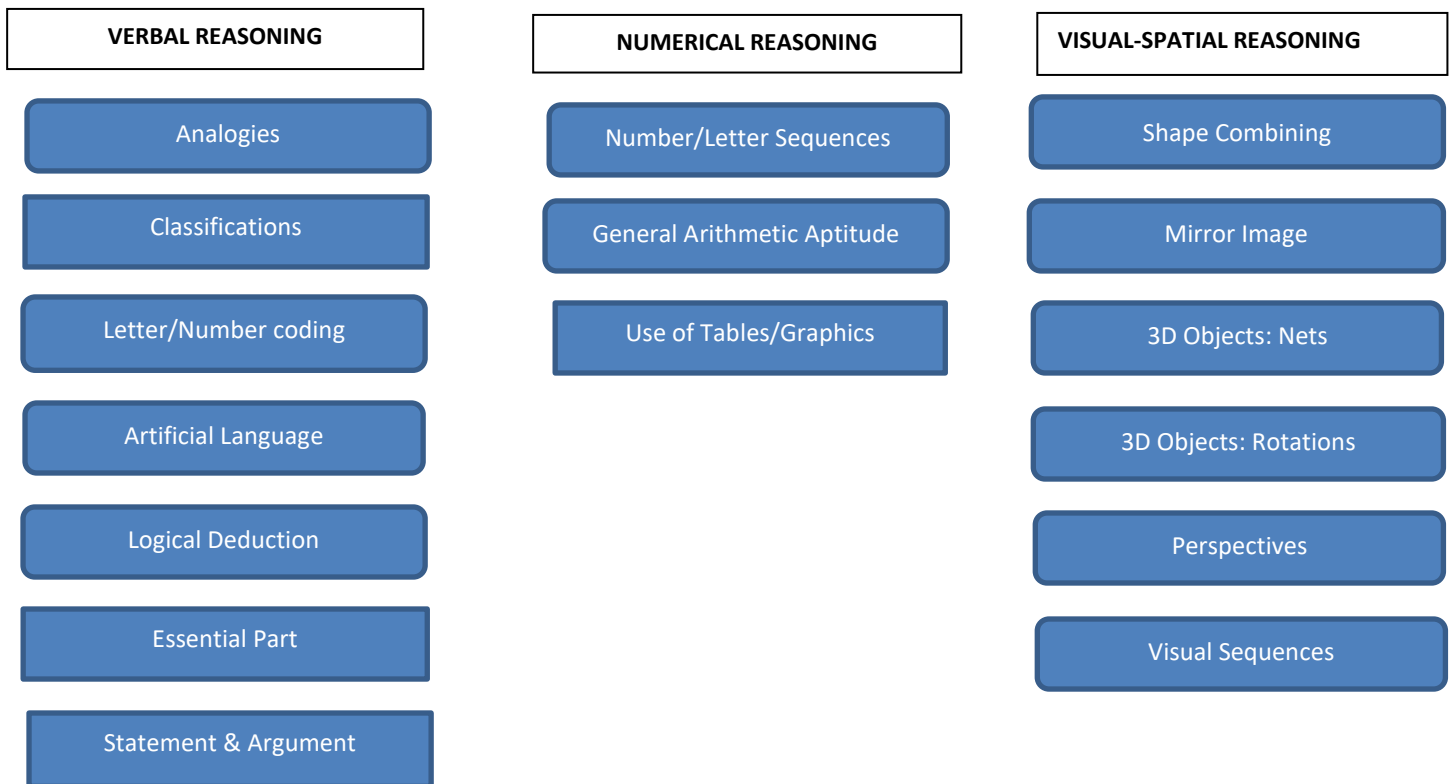


Figure 1. Sub-Dimensions of quantitative and qualitative reasoning

## GENERAL TIPS FOR VNVS TEST

### **BEFORE THE EXAM**

- TIP 1** Review your number facts: addition, subtraction, multiplication, division, order of operations using parenthesis, arithmetic sequences etc.
- TIP 2** Review your basic word problem solving skills: percentages, ratio, proportion etc.
- TIP 3** Review visual-spatial exercises: the ability to form and comprehend in two or three dimension and to recognize relationships resulting from movement of objects in space.
- TIP 4** Practice questions in the areas you think you are less competent.

## ***DURING THE EXAM***

- TIP 5** Answer easy questions first, then harder ones.
- TIP 6** Try to anticipate the correct answer before looking at the options.
- TIP 7** Pay attention to the qualifiers 'usually', 'none', 'always', 'never' and key words 'except', 'the best', 'the least' etc.
- TIP 8** Read all of the options; eliminate the ones you know are incorrect.
- TIP 9** Look for options that contain other options. These are called 'umbrella' options because the other options fall within their scope.
- TIP 10** Sometimes the longer response may be the clue to the correct response.

## **SAMPLE QUESTIONS FOR VNVS TEST**

### **A) VERBAL REASONING**

#### ***Letter Coding***

- 1) If you rearrange the letters SUBAPEDT, you would have the name of a(n)?

- A) Animal
- B) Country
- C) Tree
- D) Fruit
- E) City

**ANSWER:** City

#### ***Essential Part***

Each question has an underlined word followed by five answer choices. You will choose the word that is a necessary part of the underlined word.

- 2) **Classroom**

- A) blackboard
- B) projector
- C) books
- D) chairs
- E) students

**ANSWER:** E

#### ***Statement and Argument***

Each question given below consists of a statement followed by two arguments numbered I and II. You have to decide which of the arguments is a "strong" argument and which is a "weak" argument.

3) **Statement:** Should new factories be established in Cyprus?

**Arguments:**

- I. Yes, it will create job opportunities.
- II. No, it will further add to the pollution of the country.

- A) Only argument I is strong
- B) Only argument II is strong
- C) Either I or II is strong
- D) Neither I nor II is strong
- E) Both I and II are strong

**ANSWER:** C

## B) NUMERICAL REASONING

### *General Arithmetic Aptitude*

4) Hasan attempts to do the calculation "24 x 15" using a calculator but he discovers that "5" button does not work. What can Hasan do alternatively by using the calculator to find the answer?

- A) He can multiply 24 by 10 and then add 2 to the result.
- B) He can divide 24 by 30 and multiply result by 2.
- C) He can multiply 24 by 10 and then divide the result by 2.
- D) He can divide 24 by 4 and then multiply the result by 10.
- E) He can multiply 24 by 30 and then divide the result by 2.

**ANSWER:** E

### *Use of Tables*

5) In a school, 292 of the students are males and the rest are females. In this school there are two types of students namely, blonds and brunettes. 63 of brunettes are females and 205 of males are blonds. If there are 503 students in total, how many of blonds are females?

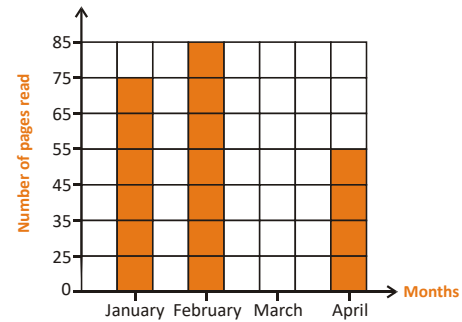
- F) 235
- G) 225
- H) 211
- I) 148
- J) 87

**ANSWER:** D

## Use of Graphics

6) The graph on the right will show the number of pages read by Ayşe in the first four months in which pages read in March is not reflected. Find what percent of pages were read in March if she read 250 pages at total?

- A) 7
- B) 14
- C) 35
- D) 45
- E) 70

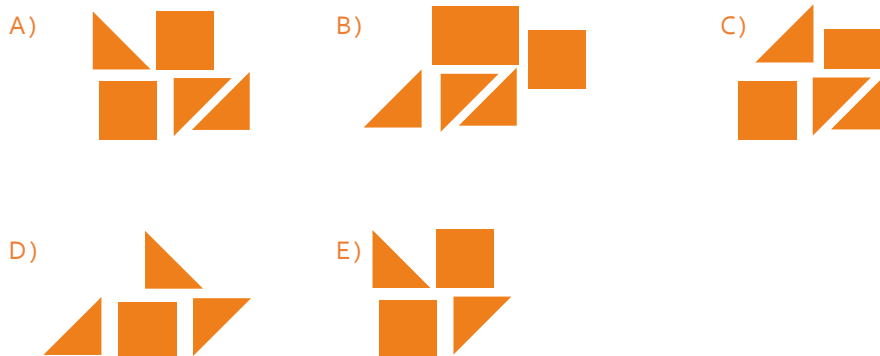


ANSWER: B

## C) VISUAL-SPATIAL REASONING

### Shape Combining

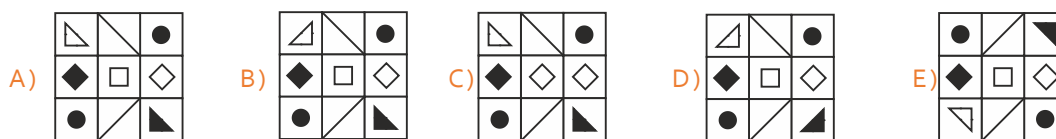
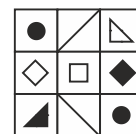
7) Below, there are some plane figures. Which of the options, makes up the next shape when the figures are arranged without overlapping each other?



ANSWER: E

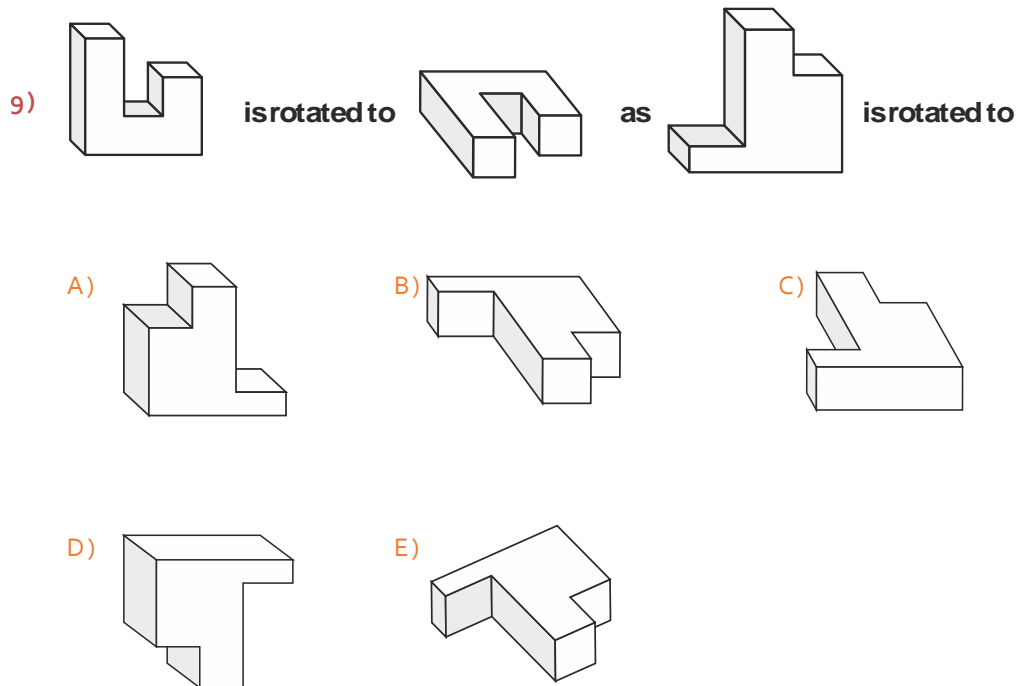
### Mirror Images

8) Which one of the following is a mirror image of the next figure?



ANSWER: B

## Rotations



ANSWER: B

More sample questions can be found on the website under [Useful Information – Written Tests](#)

### An Example of How Standard T-Scores May Effect the Rank of Candidates

The table on the left shows the ranking of a group of candidates according to raw scores (unstandardized) total. However, the table on the right shows the ranking of the same group when the raw scores are transformed into standard T-scores. As seen from the tables the rank of candidate 43 moved up to the third rank when the scores are transformed into standard scores.

CANDIDATE NO	MOTIVATION LETTER RAW SCORE	VNVS RAW SCORE	TOTAL	CANDIDATE NO	MOTIVATION LETTER STADARDIZED SCORE	VNVS STANDARDIZED SCORE	TOT
12	45	42	87.00	12	56.17	59.67	115.84
1	50	23	73.00	1	60.38	46.06	106.45
23	18	50	68.00	43	56.17	43.91	100.09
43	45	20	65.00	23	33.44	65.39	98.83
54	38	16	54.00	54	50.28	41.05	91.33
13	30	20	50.00	13	43.55	43.91	87.46

Mean of VNVS = 28.5

Standard Deviation of VNVS = 13.97

**Following is an example of computing standard T-score.**

**Calculation of T-Verbal, Numerical & Visual-Spatial Test (VNVST) score of Candidate 12**

**STEP 1: Finding z-score**

$$\text{z-score} = \frac{\text{SCORE OF THE CANDIDATE} - \text{MEAN OF VNVST}}{\text{STANDARD DEVIATION}} = \frac{42 - 28.5}{13.97} = 0.97$$

**STEP 1: Finding T-score**

$$\begin{aligned} \text{T-SCORE} &= 10 \times \text{Z-SCORE} + 50 = \\ &10 \times 0.97 + 50 = 9.7 + 50 = 59.7 \end{aligned}$$