

MSAT–Malaysia

Medical Selection Admissions Test – Malaysia

Sample Questions 1



GENERAL ADVICE ON TAKING MSAT–MALAYSIA

The MSAT–Malaysia Sample Questions contains 11 Quantitative Reasoning and 11 Critical Reasoning and 11 Interpersonal Understanding questions. It comprises sample material that is representative of the live Medical Selection Admissions Test - Malaysia.

As with the live test, the Sample Questions is organised into units consisting of stimulus material followed by a number of multiple-choice questions.

Working through the Sample Questions will familiarise you with the level of difficulty and the type of material found in the live test.

For each question, you are asked to select, from four alternatives (**A–D**), the alternative that best answers the question or completes a statement.

Answers to all questions are provided at the end of the document.

In addition to gaining familiarity with actual MSAT–Malaysia questions, working through this MSAT–Malaysia Sample Questions will help you to build your general test-taking skills.

It will help you to:

- build a positive attitude
- be prepared and confident
- use your time wisely
- develop your test-taking strategies
- apply strategies for answering multiple-choice questions
- check your answers.

Before the test day

Build a positive attitude

Part of your preparation for MSAT–Malaysia is to develop a confident attitude. This will also help you in controlling any pre-test nerves and give you the best chance of doing well.

Focus on positive thoughts about the test, not negative ones. Be aware that although the topic or subject matter may be new to you, the questions will not depend on any previous knowledge of the particular subject matter. MSAT–Malaysia questions are designed to assess your ability to respond to new and unknown situations and problems, and to use the skills you have built up over the whole span of your life and education. Questions are based solely on the information contained in the stimulus material, and success depends on your ability to use your skills of reasoning and problem solving to reach a solution. So, even if the topic of a question is new to you, this should not affect your ability to apply your general skills to find the answer.

Be prepared

There are two key aspects to being prepared:

1. Find out in advance as much as possible about the test.

Most importantly, you should read the MSAT–Malaysia Information Booklet thoroughly and consult the MSAT–Malaysia webpages at

- msat-malaysia@acer.org
- <https://medicine.um.edu.my/ug>

These both contain all the information you need to take the test, as well as updates and answers to frequently asked questions.

You should know:

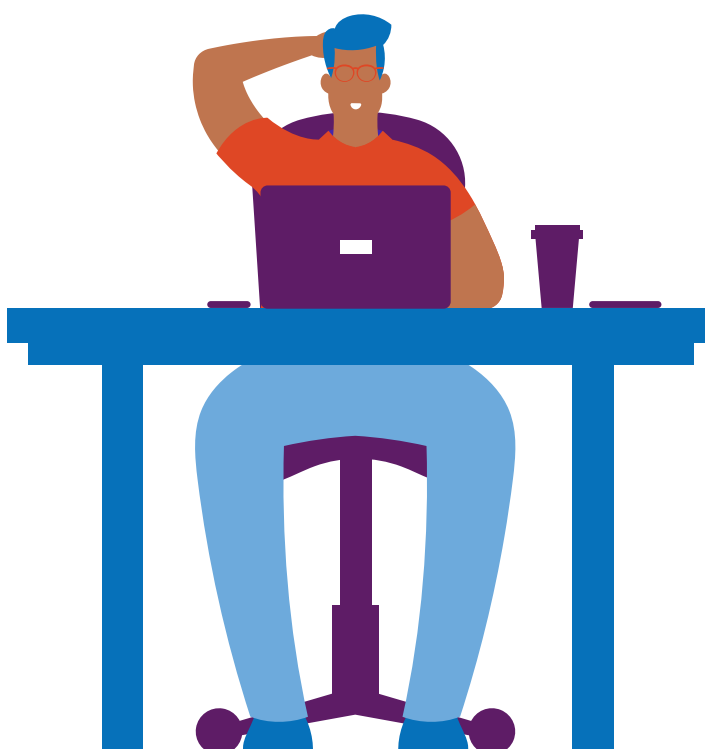
- how long the test takes (and how much time is allowed for each Section)
- the rules you will be expected to follow during the test
- the type and number of questions in each Section.

2. Make sure you know the practical details.

You should know:

- when you will receive your Admission Ticket
- your test centre address and reporting time allowed (on the Admission Ticket)
- documents you must take with you on the day
- equipment you will need for the test (pencils and eraser, whiteboard)
- items you are prohibited from taking into the test.

All this information can be found on the MSAT–Malaysia website.



Quantitative Reasoning

Questions 1 – 4

Our solar system is composed of nine* planets that travel around a star we call the Sun. Figure 1 indicates the relative sizes of the planets and their order from the Sun. Table 1 provides further information about the planets (based on information known around the year 2000).

- An orbit is the path a planet takes as it travels completely around the Sun.
- The length of a year for a planet is the time it takes for the planet to travel once around the Sun.
- The length of a day for a planet is the time it takes to spin around once on its axis.

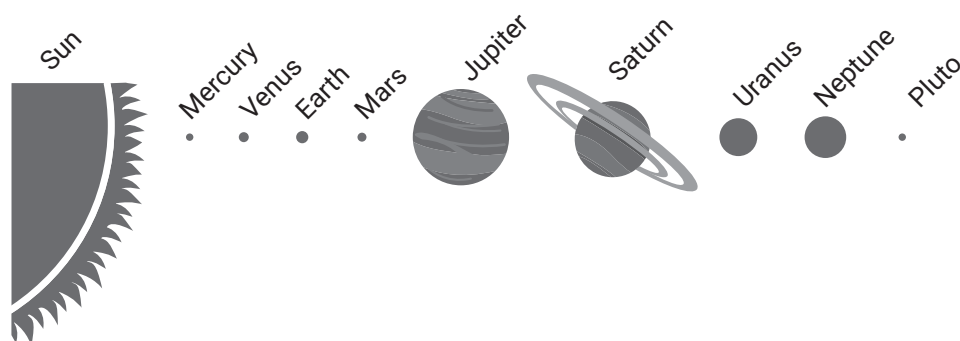


Figure 1

Table 1

Planet	Mean distance from the Sun ($\times 1,000,000$ km)	Diameter (km)	Number of moons	Average orbital speed (km/s)	Time to orbit the Sun (Earth years)	Length of day (hours)
Mercury	58	4,880	0	48.0	0.24	1416
Venus	108	12,100	0	35.0	0.62	5832
Earth	150	12,760	1	30.0	1.00	24
Mars	228	6,800	2	24.0	1.88	24.6
Jupiter	778	143,800	16	13.0	11.86	9.84
Saturn	1,427	120,000	18	10.0	29.46	10.23
Uranus	2,870	52,300	15	6.8	84.01	17.24
Neptune	4,497	49,500	8	5.4	164.79	18.4
Pluto	5,900	3,000	1	4.7	247.70	153.4

* recently Pluto has been downgraded to a minor planet.

1 Which one of the following statements is supported by the data?

- A** Day length increases as distance from the sun decreases.
- B** Orbital speed increases as year length decreases.
- C** Diameter increases as orbital speed increases.
- D** Year length decreases as diameter increases.

2 Which of the following statements is best supported by the data?

- A** Planets further from the sun travel faster and therefore have shorter days.
- B** Planets closer to the sun travel faster and therefore have shorter days.
- C** Planets with longer days travel slower and are closer to the sun.
- D** Day length is unrelated to average orbital speed and distance from the sun.

3 Which of the following is the best estimate of the number of Neptune days that equal ten Earth days?

- A** 4
- B** 8
- C** 12
- D** 16

4 Which of the following is the best estimate of the number of Saturn days in an Earth year?

- A** 1600
- B** 800
- C** 400
- D** 100

Questions 5 – 7

When fighting bushfires, a major problem for firefighters is dealing with the heat. Heat enters, leaves or is produced in a firefighter's body by the following processes:

- radiation – heat from the fire and the sun radiate to the firefighter's body.
- conduction/convection – body heat is carried away by the surrounding air.
- metabolism – heat is produced in the firefighter's body.
- evaporation of sweat – heat is removed from the firefighter's body as sweat evaporates from skin and clothing.

In a study of heat balance in firefighters, two groups of firefighters built a firebreak – a hard physical task. One group did so next to a fire. The other group did exactly the same work under the same conditions except that no fire was burning nearby. Table 1 gives the average results for the firefighters in the two groups.

Table 1

Process	Amount of heat gained or lost per minute by the body	
	fire nearby	no fire nearby
radiation	gain of 260 joule	gain of 51 joule
conduction / convection	loss of 60 joule	loss of 80 joule
metabolism	gain of 488 joule	gain of 561 joule
evaporation of sweat	loss of 688 joule	?

The amount of sweat that evaporates is the amount that is required to keep the body's temperature constant (i.e. the sum of gains and losses will be zero). Note that no value is given for the evaporation of sweat when building a firebreak with no fire nearby.

- Although Table 1 provides average results, assume that these apply to any individual firefighter.
- Although some of the processes can transfer heat to or from a firefighter, this unit and Table 1 refer to net gains or losses of heat by each process. Use the figures given in the table when answering the questions.

5 When building a firebreak, the body of a firefighter

- A** loses heat by radiation and gains heat by conduction/convection.
- B** gains heat by radiation and loses heat by conduction/convection.
- C** loses heat both by radiation and conduction/convection.
- D** gains heat both by radiation and conduction/convection.

6 The heat lost by evaporation of sweat from the body of a firefighter in one minute while building a firebreak without a fire nearby is

- A** 532 joule.
- B** 590 joule.
- C** 612 joule.
- D** 688 joule.

7 Which one of the following increases when a firefighter moves from an area where there is no fire nearby to an area where there is a fire nearby?

- A** the amount of heat produced per minute by metabolism
- B** the amount of heat lost per minute by conduction/convection
- C** the amount of heat lost per minute by the evaporation of sweat
- D** none of A or B or C

Questions 8 – 11

Figures 1 and 2 provide some information about a model of the relationship between leg length (L), stride length (S) and speed (v) of various animals. For any individual, stride length and speed can vary, but leg length is fixed.

Figure 2 relates *Relative Stride Length* ($\frac{S}{L}$) to a parameter known as the *Froude Number* ($\frac{v}{\sqrt{gL}}$).

The line of best fit shown was obtained from individuals, travelling at various speeds, of a number of four-legged and two-legged animal species. Also shown are three points based on values obtained from individuals of three species.

- L and S are in metres (m)
- v is in metres per second (m s^{-1})
- g is acceleration due to gravity on Earth and is approximately equal to 10 m s^{-2}

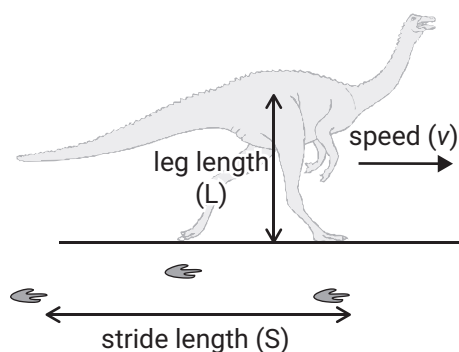


Figure 1

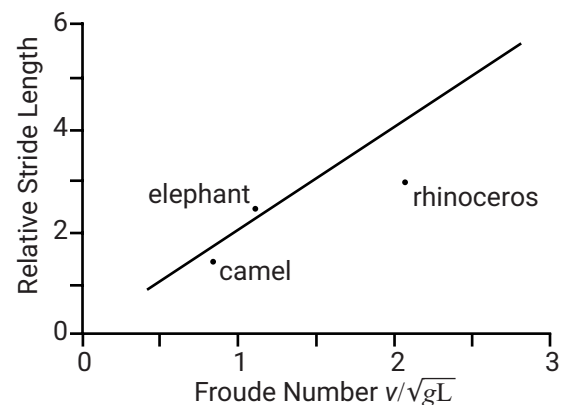


Figure 2

- 8 If an animal has a Relative Stride Length of more than 2, it is considered to be running.

Which of the individual animals shown in Figure 2 was running?

- A the elephant only
- B the rhinoceros only
- C the camel and the rhinoceros
- D the elephant and the rhinoceros

9 For the line of best fit, what is the approximate ratio of Relative Stride Length to Froude Number?

- A** 1:1
- B** 1:2
- C** 2:1
- D** 4:1

10 Based **just** on Figure 2, which of the individual animals shown had the greatest leg length?

- A** elephant
- B** camel
- C** rhinoceros
- D** There is insufficient information provided to answer this question.

11 According to the line of best fit, two animals with the same Froude Number must have approximately the same value for

- A** S/L.
- B** v only.
- C** L only.
- D** both v and L

Critical Reasoning

Questions 1 – 3

The following passage describes the experiences of a man who has had surgery that has given him vision after a lifetime of blindness.

One man when shown an orange a week after beginning to see, said that it was gold. When asked, 'What shape is it?' he said, 'Let me touch it and I will tell you!' After doing so, he said that it was an orange. Then he looked long at it and said, 'Yes, I can see that it is round.' Shown next a blue square, he said it was blue and round. A triangle he also described as round. When the angles were pointed out to him he said, 'Ah. Yes, I understand now, one can see how they feel.' For many weeks and months after beginning to see, the person can only with great difficulty distinguish between the simplest shapes, such as a triangle and a square. If you ask him how he does it, he may say, 'Of course if I look carefully I see that there are three sharp turns at the edge of one patch of light, and four on the other.' But he may add peevishly¹, 'What on earth do you mean by saying that it would be useful to know this? The difference is only very slight and it takes me a long time to work it out. I can do much better with my fingers.' And if you show him the two shapes the next day he will be quite unable to say which is a triangle and a square.

5

10

¹ *impatiently or irritably*

1 One week after beginning to see, the man

- A** related shapes directly to visual images.
- B** formed visual impressions of shapes indirectly.
- C** recognised shapes by associating them with colour.
- D** no longer relied on his sense of touch to recognise shapes.

2 The man's mistake about the square (lines 4 and 5) suggests that

- A** his vision was still impaired.
- B** he could not make full use of visual clues.
- C** the idea of shape was meaningless for him.
- D** colour made shape perception more difficult.

3 The passage suggests that shape perception is generally dependent on

- A** experience.
- B** clear vision.
- C** natural ability.
- D** colour perception.

Question 4



- 4 The cartoon is a joke about people's
- A diverse reactions to common symptoms.
 - B limited knowledge of medical conditions.
 - C tendency to over-react and be self-centred in matters of health.
 - D tendency to self-diagnose in spite of access to professional expertise.

Questions 5 and 6

The following have been suggested as four common responses by people to the threat of natural disasters, such as floods, droughts, cyclones, earthquakes and bushfires.

Common responses

- 1 They deny or play down its existence.
- 2 They deny or play down its recurrence.
- 3 They make it predictable or understandable.
- 4 They place responsibility elsewhere.

5 Consider the statement: 'We should have recognised the signs' and identify the response category to which it belongs.

- A They deny or play down its existence.
- B They deny or play down its recurrence.
- C They make it predictable or understandable.
- D They place responsibility elsewhere.

6 Which of the following responses is different to the four common responses listed above?

- A 'Why weren't we told this could happen?'
- B 'We must make sure we are better prepared next time.'
- C 'Every ten years we seem to have some kind of disaster.'
- D 'Scientists are always predicting a disaster but it never happens.'

Question 7

When men lack a sense of awe, there will be disaster.

Lao Tse

7 This statement suggests that

- A disaster is inevitable.
- B awe inspires caution.
- C awe encourages confidence.
- D carelessness leads to disaster.

Questions 8 – 11

The numbered statements below are from a debate for and against the topic that

Animals should not be killed for sport.

For each numbered statement, choose the alternative (A–D) that most appropriately describes the relationship of the statement to the topic of the debate.

- A** The statement is most probably part of the debate for the topic.
- B** The statement is most probably part of the debate against the topic.
- C** The statement could be part of the debate for or against the topic.
- D** The statement is not relevant to either the debate for or against the topic.

Statements

- 8** Animals feel pain just like humans do.
- 9** Hunting is a natural process in humans.
- 10** The real issue is whether there is any difference between humans and animals.
- 11** Some animals are killed to develop medicine for humans.

Interpersonal Understanding

Questions 1 – 4

The following passage is from a novel. Paul is a sixty-year-old man whom has had a leg amputated as the result of being hit by a car while riding a bicycle. A prosthesis is an artificial limb.

'Today we're going to have you walking,' says young Dr Hansen. 'This afternoon. Not a long walk, just a few steps to give you the feel of it. Elaine and I will be there to lend you a hand.' He nods to the nurse. Nurse Elaine. 'Elaine, can you set it up with Orthopaedics?'

'I don't want to walk today,' Paul says. He is learning to talk through clenched teeth. It is not just that the jaw is bruised, the molars on that side have been loosened too, he cannot chew. 'I don't want to be rushed. *I don't want a prosthesis.*'

5

'That's fine,' says Dr Hansen. 'It's not a prosthesis we are talking about anyway, that is still down the line, this is just rehabilitation. But we can start tomorrow or the next day. Just so you can see it isn't the end of the world, losing a leg.'

'Let me say it again: *I don't want a prosthesis.*'

10

Dr Hansen and Nurse Elaine exchange glances.

'If you don't want a prosthesis, what would you prefer?'

'I would prefer to take care of myself.'

'All right, end of subject, we won't rush you into anything, I promise. Now can I talk to you about your leg? Can I tell you about care of the leg?'

15

Care of my leg? He is smouldering with anger – can they not see it? *You anaesthetised me and hacked off my leg and dropped it in the refuse for someone to collect and toss into the fire. How can you stand there talking about care of my leg?*

'We have brought the remaining muscle over the end of the bone,' Dr Hansen is saying, demonstrating with cupped hands how they did it, 'and sewn it there. Once the wound heals we want that muscle to form a pad over the bone. During the next few days, from the trauma and from the bed rest, there will be a tendency to oedema and swelling. We need to do something about that. There will be a tendency for the muscle to retract towards the hip, like this.' He stands sideways, pokes out his behind. 'We counteract this by stretching. Stretching is very important. Elaine will show you some stretching exercises and help you if you need help.'

20

Nurse Elaine nods.

25

'Who did this to me?' Paul says. He cannot shout because he cannot open his jaws, but that suits him, suits his teeth-grinding rage. 'Who hit me?' There are tears in his eyes.

1 In context, Dr Hansen's assertion that losing a leg 'isn't the end of the world' (line 9)

- A** shows impatience.
- B** is an attempt to encourage optimism.
- C** shows that he thinks Paul is being self-indulgent.
- D** is meant to conceal the hopelessness of Paul's situation.

2 In lines 19–25 Dr Hansen seems to understand Paul's treatment principally as

- A** offering the patient comfort.
- B** motivating a lethargic patient.
- C** carrying out a mechanical repair.
- D** overcoming the patient's stupidity.

3 When Dr Hansen and Nurse Elaine 'exchange glances' (line 11) it shows that they

- A** disagree about how to handle this situation.
- B** have a shared understanding of this situation.
- C** are experiencing this situation for the first time.
- D** are embarrassed by the situation they have created.

4 By the end of the passage Paul's rage has been

- A** dispelled.
- B** trivialised.
- C** contained.
- D** redirected.

Questions 5 – 7

The following passage is from a short story. Kezia and her grandmother are resting in the middle of a summer day. The grandmother is sewing. Kezia has asked her grandmother why she keeps staring at the wall.

The old woman sighed, whipped the cotton twice round her thumb, and drew the bone needle through.

'I was thinking of your Uncle William, darling,' she said quietly.

'My Australian Uncle William?' said Kezia. She had another.

'Yes, of course.'

'The one I never saw?'

'That was the one.'

'Well, what happened to him?' Kezia knew perfectly well, but she wanted to be told again.

'He went to the mines and he got a sunstroke there and died,' said old Mrs Fairfield.

Kezia blinked and considered the picture again ... A little man fallen over like a tin soldier by the side of a big black hole.

'Does it make you sad to think about him, grandma?' She hated her grandma to be sad.

It was the old woman's turn to consider. Did it make her sad? To look back, back. To stare down the years, as Kezia had seen her doing. To look after them as a woman does, long after they were out of sight. Did it make her sad? No, life was like that.

'No, Kezia.'

5

10

15

5 'Kezia knew perfectly well, but she wanted to be told again' (line 8).

Why did Kezia want to be told again?

- A** She was trying to compare her two uncle Williams.
- B** She thought that her grandmother might alter the story.
- C** It provided familiarity and connectedness to her family.
- D** It was helping her to confront the reality of her uncle's death.

6 The grandmother's response to Kezia's question, 'Does it make you sad to think about him, grandma?' (line 12) suggests that the grandmother

- A** has not come to terms with the death.
- B** feels comfortable thinking about him.
- C** does not want to admit to Kezia that she is still sad.
- D** no longer has a clear memory because it was so long ago.

7 The way that the grandmother responds to Kezia suggests that

- A** she prefers not to talk about Uncle William.
- B** she is slightly irritated by Kezia's persistence.
- C** she thinks Kezia is still too young to understand.
- D** Kezia is welcome to raise the topic again one day.

Questions 8 and 9

In the following passage, the mother of a disabled child (named Jane) speaks about her early experiences when facing other people's reactions to her child.

When Jane was fitted with her hearing aids she was just a baby and I thought they looked awful – they were so noticeable. One day I plucked up enough courage to wheel her down the street in the pram and I was a bit terrified about how I would handle comments about the hearing aids. Do you know, nobody I spoke to said anything about them and just about everyone said 'What a pretty dress'. I know it was hard for them but I felt like saying 'Forget the dress – why don't you say something about the hearing aids?'

5

- 8** The mother assumed that people did not mention the hearing aids because they
- A** were too distracted by Jane's dress.
 - B** felt uncomfortable raising the topic.
 - C** were trying to be sensitive towards her feelings.
 - D** did not think they were important enough to mention.
- 9** Which of the following actions by the mother would have most helped her in this situation?
- A** dressing Jane more plainly
 - B** not stopping to talk to people
 - C** drawing attention to the hearing aids herself
 - D** removing the hearing aids before she went out

Questions 10 and 11

The following incident took place in a jewellery shop.

After showing the customer innumerable diamond rings, the shopkeeper brought out the last remaining selection. The customer whistled loudly and said, 'Gee, lucky I don't have to get married every year!'

'Too pricey?' said the shopkeeper. 'Maybe you'd like to see something in macaroni and spray paint?'

10 The shopkeeper is most likely feeling

- A** rejected.
- B** belittled.
- C** bewildered.
- D** exasperated.

11 When the customer says 'Gee, lucky I don't have to get married every year!', he is most likely

- A** acknowledging that this will be a big outlay for him.
- B** suggesting that the quality of the jewellery is disappointing.
- C** expressing intolerance for the fuss associated with weddings.
- D** trying to indicate politely that he will not be making a purchase.

ANSWERS

Quantitative Reasoning		Critical Reasoning		Interpersonal Understanding	
1	B	1	B	1	B
2	D	2	B	2	C
3	C	3	A	3	B
4	B	4	C	4	D
5	B	5	C	5	C
6	A	6	B	6	B
7	C	7	B	7	D
8	D	8	A	8	B
9	C	9	B	9	C
10	D	10	C	10	D
11	A	11	D	11	A

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P. 11-12: Dr Hansen and Paul (items 1-4), Coetzee, J.M., *Slow Man*. Viking (Penguin), NY, 2005, pp. 10 and 11. ISBN-10: 0670034592 ISBN-13: 978-0670034598; P. 13 -14: Katherine Mansfield: 'At the Bay', in 'Collected Stories of Katherine Mansfield', Constable and Company Ltd., London, 1976, pp 225 - 226; from *Doubt and Certainty in Science: A Biologist's Reflections on the Brain* by John Z. Young, 1951. Reproduced by permission of Oxford University Press; Roz Chast / www.CartoonStock.com.