WELCOME
to the
SAASTA
AstroQuiz 2016
NATIONAL FINALS

RULES OF THE QUIZ

• The audience must be silent throughout the quiz and NOT whisper to anyone.
• No resource material can be taken into the quiz venue.
• Teams have up to 1 minute to discuss each answer and must reveal their answers immediately when the signal is given that the time is up.
• The scores will be calculated and given after THE FIRST ten questions ONLY and overall winners will be announced at the Awards function in the evening.
• The audience will get a chance to win prizes!
• A tie-break will be settled on a “sudden death” basis, involving tied teams only (i.e. as soon as a team falls behind on correct answers, it is knocked out).

QUESTION 1
The Moon is the Earth’s natural satellite orbiting it at a mean distance of approximately____

A. 308 000 km
B. 450 000 km
C. 384 000 km
D. 300 000 km

QUESTION 2
Which of the following is true about the Moon?

A. Only one face of the Moon is visible from the Earth
B. The whole surface of the Moon can be seen from Earth as the Moon rotates and revolves around it.
C. Only one phase of the Moon is visible from the Earth
D. The Moon does not rotate

QUESTION 3
The three nearest stars to the Sun are _

A. Spica, Betelgeuse, Rigel
B. Aldebaran, Acturus, Polaris
C. Proxima Centauri, Alpha Centauri A, Alpha Centauri B
D. Proxima Centauri, Rigel, Spica

QUESTION 4
The SKA, “Square Kilometre Array” is called as such because____

A. The size of all the telescopes together will add up to one square kilometre
B. The total surface area of all the antennas will add up to one square kilometre
C. The telescopes will be put on a one square kilometre bedrock
D. One telescope will be one square kilometre in size
QUESTION 5
The core of the Square Kilometer Array will be situated in the Karoo in the Northern Cape province.

A. True  
B. False

QUESTION 6
Which first demonstrator telescope did South Africa build to help with the developments of Square Kilometre Array?

A. Kat-7  
B. MeerKat  
C. eXperimental Development Model  
D. SumbandilaSat

QUESTION 7
The Square Kilometre Array (SKA) will be able to ____

A. Probe the secrets of the Universe  
B. Tell us more about the composition of the Earth  
C. Measure the core temperature of the Sun  
D. None of the above

QUESTION 8
What type of satellite is the South African satellite SumbandilaSat?

A. Communication  
B. Earth observation  
C. Weather  
D. Navigation

QUESTION 9
South Africa's MeerKAT telescope is an SKA precursor or 'pathfinder' telescope. How many dish-shaped antennas will it consist of?

A. 46  
B. 47  
C. 64  
D. 74

QUESTION 10
What is the name of the set of telescopes built as an engineering prototype for the MeerKAT?

A. KAT-7  
B. ASKAP  
C. SALT  
D. MeerKat-7
QUESTION 11
What is the name of the largest single optical telescope found in the Southern Hemisphere?
A. SKA
B. SALT
C. KAT-7
D. MeerKAT

QUESTION 12
The diameter of the Earth is 12 756 km. If a soccer field is 100 m long, how many soccer fields will fit in the Earth's diameter?
A. 127 560
B. 1 275 600
C. 12 756 000
D. 12 756

QUESTION 13
The nearest planet to the Sun with more than one moon is _____
A. Mercury
B. Mars
C. Venus
D. Earth

QUESTION 14
Choose the true statements about Ceres.
Ceres is
i) in the Kuiper Belt.
ii) a dwarf planet.
iii) in the asteroid belt.
iv) the largest comet.
The true statements are
A. i) & ii)  B. i) & iii)  C. ii) & iii)  D. i) & iv)

QUESTION 15
The diameters of the Sun and the Moon are approximately 1 391 000 and 3 475 km respectively. How many times bigger is the Sun than the Moon?
A. 109
B. 0.0032
C. 400
D. 1 387 525

QUESTION 16
Temperatures around the equator are on average higher than at any other area on planet Earth.
A. True
B. False
QUESTION 17
Heliocentric means ___ is in the centre.

A. Jupiter
B. Earth
C. The Sun
D. Neptune

QUESTION 18
Which of the planets below have no moons at all?

A. Venus & Mercury
B. Mercury & Neptune
C. Uranus & Neptune
D. Venus & Uranus

QUESTION 19
How many terrestrial planets have natural satellites?

A. Five
B. One
C. Four
D. Two

QUESTION 20
If the Earth has a diameter of 12 756 kilometres, what will its circumference (C) be in kilometres?

NB: \( C = 2\pi r \), \( \pi = 3.14 \); \( r \) is radius.

A. \( 4,0054 \times 10^4 \)
B. \( 4,0054 \times 10^5 \)
C. \( 4,0054 \times 10^6 \)
D. \( 40,0054 \times 10^7 \)

QUESTION 21
When the Earth is furthest from the Sun, what season is it in the Southern hemisphere?

A. Summer
B. Winter
C. Autumn
D. Spring

QUESTION 22
What can be said about the lengths of the years on a planet?

The year lengths ___

A. increase with their distance from the Sun
B. decrease with their distance from the Sun
C. first decrease and then increase
D. have no relation to the distance from the Sun
QUESTION 23
The largest moon in the solar system is ______
A. Titania, a moon of Uranus
B. Ganymede, a moon of Jupiter
C. Titan, a moon of Saturn
D. the Moon

QUESTION 24
If the planets Venus, Earth and Mars are arranged according to decrease in day lengths, what will the sequence will be?
A. Venus, Earth, Mars
B. Mars, Venus, Earth
C. Earth, Venus, Mars
D. Venus, Mars, Earth

QUESTION 25
Which of the following lists has the objects arranged with decreasing diameter?
A. Earth’s Moon, Pluto, Mars, Mercury
B. Mars, Mercury, Earth’s Moon, Pluto
C. Mercury, Mars, Earth’s Moon, Pluto
D. Pluto, Earth’s Moon, Mercury, Mars

QUESTION 26
Ordered by decrease in diameter, which sequence will be correct?
A. Pluto, Haumea, Ceres
B. Pluto, Ceres, Haumea
C. Ceres, Pluto, Haumea
D. Ceres, Haumea, Pluto

QUESTION 27
Apart from the Moon, which other celestial object in our solar system has been visited by human beings?
A. Venus
B. Saturn
C. Mars
D. None of the above

USE PICTURE 1 TO ANSWER QUESTIONS 28 to 30
QUESTION 28
Which object can be seen in picture 1?
A. The Moon  
B. The Sun  
C. Venus  
D. Mars

QUESTION 29
What kind of an event is seen in Picture 1?
A. Lunar eclipse  
B. Solar eclipse  
C. Start of solar flares  
D. Sun about to rise

QUESTION 30
When this event takes place, what phase of the Moon will it be?
A. New Moon  
B. Full Moon  
C. First Quarter  
D. Third Quarter

THANK YOU FOR PARTICIPATING

PLEASE REMEMBER:
SUDDEN DEATH TIE BREAKERS
The first team to get the first correct answer is the winner!

ALL THE BEST!
QUESTION 1
The tilt of the Earth’s spin axis causes ______
A. the seasons
B. day and night
C. the ice on its poles
D. it to sustain life

QUESTION 2
The brightest star in the sky, Sirius, is/was____
A. Closest to the Earth
B. Whiter and hotter than the Sun
C. Blue and cold
D. Discovered by Robert Innes in 1915

QUESTION 3
Which of the following is the most accurate statement about the seasons?
A. Seasons occur because the Sun goes around the Earth and the Moon around the Earth
B. Seasons occur because the Earth goes around the Sun
C. Seasons occur because the Earth goes around the Sun and its axis is tilted at 23.5° to the plane of its orbit
D. Seasons occur because the Earth’s orbit brings it nearer and further away from the Sun

QUESTION 4
Which one of the following is true?
A. A galaxy is made of a few collection of stars held together by gravity
B. None of the stars in a galaxy have common gravity
C. Galaxies contain stars only
D. A galaxy is a collection of many stars, gas and dust which are held together by gravity

QUESTION 5
Planets in the solar system shine by ____
A. Nuclear fusion in their cores
B. Refracting sunlight
C. Reflecting sunlight
D. b and c above

THANK YOU FOR PARTICIPATING ALL THE BEST!