

**Topic 1 – For Our Eyes Only**

1. A set of axes used to describe the positions, or motions of things within a specific area is called a frame of reference. The *axes for the frame of reference* to identify locations on the earth are ...
  - A. Equinox and Solstice
  - B. Ecuador and Madagascar
  - C. Equator and Prime Meridian
  - D. Tropics of Cancer and Capricorn
2. Ancient peoples used points of reference in the sky to help them find directions on the Earth. The North Star (Polaris) was used in the Northern Hemisphere and in the Southern Hemisphere they used the constellation *Crux*, the ...
  - A. South Star
  - B. South Pole
  - C. Southern Star
  - D. Southern Cross
3. The Ancient Egyptians believed that the Sun God *Ra* was pulled across the sky in a sacred ...
  - A. sled
  - B. boat
  - C. wagon
  - D. chariot
4. *Altitude-Azimuth co-ordinates* locate a celestial body in the sky relative to a fixed Earth. This means that the location of a celestial body is ...
  - A. fixed in place
  - B. directly above you
  - C. relative to the moon
  - D. changing continually
5. The *astrolabe* is a device that is used to measure azimuth. It was invented by ...
  - A. Aristotle
  - B. Galileo Galilei
  - C. Ancient Greeks
  - D. Ancient Egyptians
6. The stars are used as a frame of reference to track the *actual motion* of each celestial body, because the motions we look at in the sky are different from the big motion caused by the Earth's ...
  - A. rotation
  - B. altitude
  - C. azimuth
  - D. orbit
7. Aristotle developed his model of the motions of celestial bodies in space based on the *mathematics and geometry* of ...
  - A. Ptolemy and Edgar
  - B. Pegasus and Eeyore
  - C. Pythagoras and Euclid
  - D. Hypotenuse and Triangulation
8. Because the patterns of stars were unchanging in the night sky, Aristotle termed them the ...
  - A. cluster of stars
  - B. constellations
  - C. nightly asterisms
  - D. firmament of stars
9. *Ptolemy and Copernicus* each developed a model of celestial bodies in our universe that explained the 'epicycles' of the planets. The biggest difference between their representations was that ...
  - A. Ptolemy had the sun at the centre
  - B. Copernicus had the sun at the centre
  - C. Ptolemy had the Earth revolving around the Sun
  - D. Copernicus had the Sun revolving around the Earth

**Topic 2 - Stronger Eyes and Better Numbers**

1. A telescope is used to magnify objects that are distant. The eyepiece lens, through which you view the image is also called the ...
  - A. reflector
  - B. refractor
  - C. objective
  - D. **ocular**
  
2. A navigation device that ancient people used to measure altitude of stars in the night sky was the ...
  - A. sextant
  - B. astrolabe
  - C. **quadrant**
  - D. compass
  
3. Galileo's telescopic observations of the moons orbiting Jupiter, supported ...
  - A. **Copernicus's Sun-centered model**
  - B. Ptolemy's Earth-centered model
  - C. Kepler's Earth-centred model
  - D. Pythagorus' Sun-centred model
  
4. In order to get finer detail in a telescopic image, the telescope must improve its ...
  - A. ocular power
  - B. **resolving power**
  - C. telescopic power
  - D. reflective power
  
5. When molten glass is poured into a rotating mould it moves to the edges and solidifies. The technique that produces this reflecting mirror is called ...
  - A. tye-dying
  - B. spin-drying
  - C. mirror image
  - D. **spin-casting**
  
6. The first telescope designed was a ...
  - A. **simple refracting telescope**
  - B. compound refracting telescope
  - C. simple reflecting telescope
  - D. compound reflecting telescope
  
7. The technique of using a number of telescopes in combination is called ...
  - A. segmentation
  - B. mirror array
  - C. **interferometry**
  - D. radio-astronomy
  
8. The **Hubble Space Telescope** is a cylindrical reflecting telescope, 13 m long and 4.3 m in diameter. Because parts of this telescope can be removed and replaced it is considered to be ...
  - A. functional
  - B. **modular**
  - C. flexible
  - D. mobile
  
9. Kepler solved the problem of the epicycles by insisting that the orbits of the planets should be ...
  - A. **elliptical**
  - B. epicycled
  - C. circular
  - D. semi-circular
  
10. The tendency of a planet to move straight as it travels through the solar system is due to ...
  - A. size
  - B. shape
  - C. gravity
  - D. **velocity**

**Topic 3 - The Spectroscope: New Meanings In Light**

1. A device that enables you to pass light through a narrow slit before sending it through a prism is called a ...
  - A. **spectroscope**
  - B. spectrograph
  - C. spectrogram
  - D. spectrometer
2. The study of spectral lines is a part of chemistry that led to the development of the science of ..
  - A. spectrography
  - B. spectralism
  - C. **spectroscopy**
  - D. spectology
3. With thousands of closely spaced slits much better detail in the spectrum can be produced using this device ...
  - A. deflector dish
  - B. reflective grid
  - C. refracting prism
  - D. **diffraction grating**
4. Spectral analysis is used to identify the spectra of a star, compared to known spectra of elements, in order to determine the star's ...
  - A. age
  - B. distance
  - C. **composition**
  - D. atmosphere
5. The spectrum of an *approaching star* shows the dark bands shift to the
  - A. **blue end of the spectrum**
  - B. center of the spectrum
  - C. violet part of the spectrum
  - D. red part of the spectrum
6. To determine the speed of the vehicle, a radar gun records the difference in the outgoing wavelength and incoming wavelength, using the ...
  - A. polar effect
  - B. **doppler effect**
  - C. parallax principle
  - D. doppler Technique
7. Kirschoff and Bunsen discovered there were three types of spectra given off by individual elements. They include all of the following, EXCEPT ...
  - A. **emmission**
  - B. continuous
  - C. absorption
  - D. **defraction**
8. The spectrum that produces dark lines when white light passes through a cooler substance is called...
  - A. **emmission**
  - B. continuous
  - C. **absorption**
  - D. defraction
9. The spectroscope's application to astronomy has helped astronomers determine the ...
  - A. **orbital rotation**
  - B. distance of stars
  - C. **composition of stars**
  - D. life cycle of a star

**Topic 4 - Bigger and Smarter Telescopes**

1. Sir William Herschel built one of the first really large reflecting telescopes and using it in 1773 he discovered the planet ...
  - A. Pluto
  - B. Neptune
  - C. Saturn
  - D. Uranus
  
2. The **NTT** (New Technology Telescope) directs computers to control an image, always moving the mirror to reflect changes in the Earth's atmosphere. The technology that does this is called ...
  - A. fibre optics
  - B. adaptive optics
  - C. reflective optics
  - D. spectral optics
  
3. The **twinkling effect** of a star is created by the ...
  - A. atmospheric motion
  - B. debris in space
  - C. size of the star
  - D. composition of the star
  
4. A galaxy is a grouping of millions or billions of stars, gas and dust. It is held together by ...
  - A. electromagnetism
  - B. magnets
  - C. gravity
  - D. glue
  
5. Two ways to measure long distances indirectly, on the ground, or in space are triangulation and ...
  - A. spectroscopy
  - B. holography
  - C. diffraction
  - D. parallax
  
6. Triangulation is based on the geometry of a ...
  - A. triangle
  - B. polygon
  - C. rectangle
  - D. quadrilateral
  
7. Using the parallax technique, the longest baseline that astronomers can use is the diameter of Earth's ...
  - A. orbit
  - B. crust
  - C. surface
  - D. atmosphere
  
8. The distance from the Earth to the Sun is 150 million kms and is called ...
  - A. a parsec
  - B. a light year
  - C. an interstellar unit
  - D. an astronomical unit
  
9. Triangulation is based on a process of estimation, using these 3 steps:
  1. *Making a scale drawing*
  2. *Creating a baseline*
  3. *Measuring angles from the end of the baseline*The correct order of the steps to follow in this method of estimating distance is ...
  - A. 1 2 3
  - B. 2 3 1
  - C. 2 1 3
  - D. 3 2 1

**Topic 5 What Channel Is This?**

1. Many different energy forms make up the different parts of the electromagnetic spectrum. Radio waves have ...
  - A. **low frequency and long wavelengths**
  - B. low frequency and short wavelengths
  - C. high frequency and long wavelengths
  - D. high frequency and short wavelengths
  
2. The advantage radio telescopes have over optical telescopes is that radio telescopes are...
  - A. **less expensive to construct and operate**
  - B. not affected by electromagnetic radiation
  - C. **used during the day, as well as at night**
  - D. can be easily moved from one location to another
  
3. Grote Reber built a radio dish, discovering that the strongest radio waves came from specific places in space. The static he heard became louder when he tuned into these ...
  - A. **astronomical objects**
  - B. optical objects
  - C. space objects
  - D. **radio objects**
  
4. Radio telescope waves provide data, which astronomers graph, using computers to store the data and false color it to produce images of the radio waves, which are coded to the strength of the waves. For low intensity waves, they are colored ...
  - A. red
  - B. **blue**
  - C. green
  - D. yellow
  
5. By combining several small radio telescopes ( just like they do with optical telescopes ) greater resolving power can be achieved. This is referred to as **radio** ...
  - A. **interferometry**
  - B. astronomy
  - C. **telescoping**
  - D. imagery
  
6. The greater the distance between the radio telescopes the more accurately they can measure ...
  - A. size
  - B. distance
  - C. **position**
  - D. composition
  
7. To improve accuracy many radio telescopes are combined electronically. This collection of many radio telescopes is called ...
  - A. a farm
  - B. **an array**
  - C. an order
  - D. a grouping
  
8. The method, called Very Long Base Interferometry ( VLBI ) enables telescopes to be connected without wires, thanks to
  - A. **lines and angles**
  - B. circles and triangles
  - C. transistors and dials
  - D. **computers and clocks**
  
9. Additional resolution in a VLA image identified a central white region in a galaxy in deep space which astronomers think is the location of a ...
  - A. new star
  - B. bying star
  - C. **black hole**
  - D. active galaxy

**Topic 6 - Above the Atmosphere and Under Control**

- The science of rocketry relies on a basic physics principle: For every action –
  - Forces will remain constant
  - There is an equal and opposite reaction**
  - Distance and speed will be decreased
  - There is a reason to overcome gravity
- The three basic parts of a rocket include all of the following, except ...
  - fuel
  - payload
  - nosecone**
  - structural elements
- Rockets have been around a long time and were originally used as...
  - fireworks and weapons**
  - ceremonial celebrations
  - modes of transportation
  - fuel for ceremonial fires
- 1926 - Robert Goddard launched the world's first...
  - payload rocket
  - multiple-stage spacecraft
  - orbital achieving spacecraft
  - liquid-propellant rocket**
- All fuels create exhaust which comes out the end of the rocket. The speed of the exhaust leaving the rocket is called the *exhaust velocity*, which determines the ...
  - speed of the rocket
  - range of the rocket**
  - direction of the rocket
  - altitude of the rocket
- A bomb that is powered by a rocket engine like the *V-2 rocket* is called a ...
  - hydrogen bomber
  - atomic reaction
  - ballistic missile**
  - scuba missile
- In the 1960's the Americans and the Russians needed to use computers to calculate and control their spacecraft in orbit. The first computers on the ground ...
  - were laptops
  - used letters only
  - were not reliable
  - filled large rooms**
- A method of acceleration which enables a spacecraft to achieve extra speed by using the gravity of a planet is called ...
  - elliptical acceleration
  - gravitational assist**
  - momentum acceleration
  - orbital velocity
- Satellites can be natural or artificial – the only natural satellites in this list ...
  - Moon**
  - Anik 1
  - LANDSAT
  - RADARSAT
- The GPS system involves the use of 24 satellites positioned in orbit, allowing for 3 to always be ....
  - at the right angle to deflect the radio signals
  - visible at night to ensure visibility in the dark
  - above the horizon to be used at any one time**
  - above or below the lowest object in the sky

**Topic 7 - The Solar System Up Close**

1. The Sun's energy is charged particles released in all directions. This solar wind bombards the Earth at 400km/s, but this protects us ...
  - A. The Asteroid Belt
  - B. Earth's magnetic field**
  - C. Earth's atmosphere
  - D. Axis and rotation of the Earth
2. The formation of our solar system is based on the ...
  - A. Big bang theory
  - B. Theory of relativity
  - C. protoplanet hypothesis**
  - D. Law of Conservation of Mass
3. On July 17, 1969 Neil Armstrong and Edwin Aldrin landed on the first other world to see up close, which was...
  - A. Mars
  - B. An asteroid
  - C. The Moon**
  - D. Venus
4. The inner planets - Mercury, Venus, Mars and the Earth - because of their composition are considered to be ...
  - A. terrestrial**
  - B. gaseous
  - C. friendly
  - D. unfriendly
5. Unmanned, remote-controlled observation equipment is sent out into space to explore distant areas of our solar system. These artificial satellites are called ...
  - A. searchers
  - B. observers
  - C. explorers
  - D. probes**
6. The astronomical unit is used for measuring 'local' distances in the solar system. It is equal to the distance from the center of the Sun to the ...
  - A. first planet
  - B. next galaxy
  - C. center of the Earth**
  - D. end of the solar system
7. In the 1920's, Ejnar Hertzsprung and Henry Norris Russell compared the surface temperature of stars with its luminosity. They graphed their data to show the relationship between ...
  - A. color and intensity
  - B. heat and temperature
  - C. temperature and age
  - D. brightness and temperature**
8. The process of 'star-building' which releases great amounts of energy and radiation is known as ...
  - A. fusion**
  - B. fission
  - C. mitosis
  - D. meiosis
9. As of 2002, *Voyager 1* is about 12.5 billion km from the Earth and *Voyager 2* is 9.8 billion kms from the Earth. 23 hours for Voyager 1 and 18 hours for Voyager 2 is the delayed transmissions communication time ...
  - A. frame
  - B. signal
  - C. lag**
  - D. key

**Topic 8 - People In Space**

1. A spacecraft launch and flight mission can be affected by floating debris, meteoroids and coronal bursts referred to as...
  - A. sunspots
  - B. solar flares**
  - C. solar winds
  - D. sunshine
2. Pieces of debris remaining in space, refers to...
  - A. Space junk**
  - B. Space garbage
  - C. Space litter
  - D. Space waste
3. To get into orbit and stay there gravity must be overcome, with a speed of 8km/s. This is called...
  - A. exit velocity
  - B. launch acceleration
  - C. gravitational lift
  - D. escape velocity**
4. The first person to orbit the Earth was a ...
  - A. Canadian
  - B. American
  - C. Russian**
  - D. European
5. In the summer of 1969 *Neil Armstrong* and *Edwin Aldrin* were the 1<sup>st</sup> humans to set foot on another place in space, when they landed on the Moon. Their first words spoken were ...
  - A. *'Houston, we are alive and well, we made it'*
  - B. *'One small step for man, one giant leap for mankind'***
  - C. *'The surface is rocky, but the sight is incredible'*
  - D. *'A new world, a new hope and a dream fulfilled'*
6. There are different types of spacecraft currently in use. The main function of a space probe is to ...
  - A. explore space**
  - B. coordinate missions
  - C. carry supplies
  - D. perform experiments
7. Outside Earth's atmosphere, life-support systems have to be artificially produced. To make a docking module compatible for Soviet and American ships in space the life support system must act as a ...
  - A. safety net
  - B. hyperbaric chamber
  - C. clean environment
  - D. life raft**
8. In 1839 Sir Edward Sabine (a Canadian) established the 1st magnetic observatory and discovered that the Aurora Borealis is associated with ...
  - A. sunspot activity**
  - B. electromagnetism
  - C. atmospheric interference
  - D. ozone depletion
9. Living in the microgravity of space can cause problems because of the effects of weightlessness on the human body. Bones have less pressure on them and so they
  - A. shrink, lose calcium and become softer
  - B. become very flexible and break easily
  - C. expand, lose calcium and become more brittle**
  - D. expand and explode if they are in space too long
10. Ion Drives are engines that use this gas instead of chemical fuel.
  - A. neon
  - B. helium
  - C. argon
  - D. xenon**