N.B. There are 10 questions. Students should attempt ALL questions. 
TIPS: Read the questions carefully, answer all questions, check any calculations.

Q1. In no more than half a page, describe the observational facts supporting the Copernican model of the solar system.

Q2. List 5 reasons why ancient civilizations were interested in astronomical events.

Q3. Describe 3 advantages of reflecting telescopes over refracting telescopes.

Q4. What is the theoretical resolution of a 1m diameter optical telescope? What limits its resolution in practice?

Q5. A telescope has a primary effective focal length of 4m and an eyepiece with a focal length of 50mm is used. What is the angular magnification of the image viewed in the eyepiece?

Q6. Name at least two imaging detectors in astronomy and briefly highlight their respective advantages and disadvantages.

Q7. What are the main components of a radio telescope? How can high resolution radio images be obtained? What kind of astrophysics are radio telescopes sensitive too?

Q8. Describe a rudimentary spectrograph and briefly outline why it is such a powerful instrument in astronomy.

Q9. Space astronomy provides unrivalled opportunities for undertaking astronomical observations. Outline some of the key advantages of space based astronomy.

Q10. Two stars have apparent magnitudes of 12.7 and 15.4. What is the ratio of their intensities – i.e. How much brighter is the 12.7 magnitude star? If two stars differ in brightness by a factor of 6 what is their magnitude difference?