

Name of the Student: _____

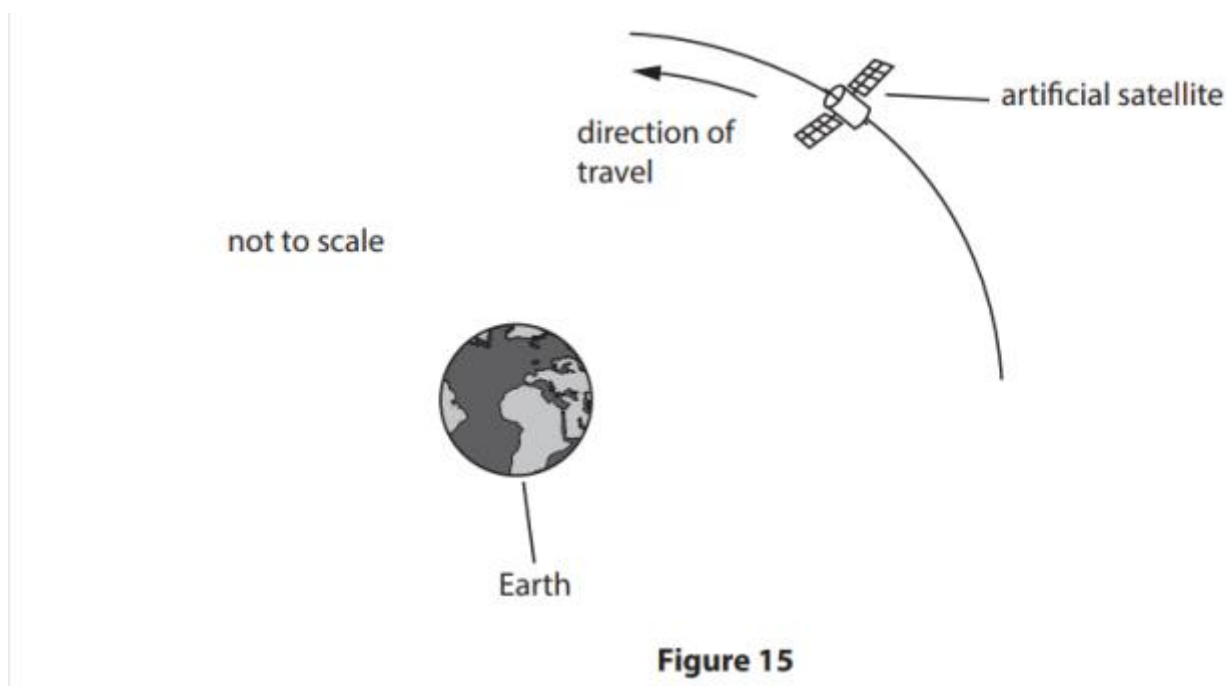
Max. Marks : 19 Marks

Time : 19 Minutes

Q1.

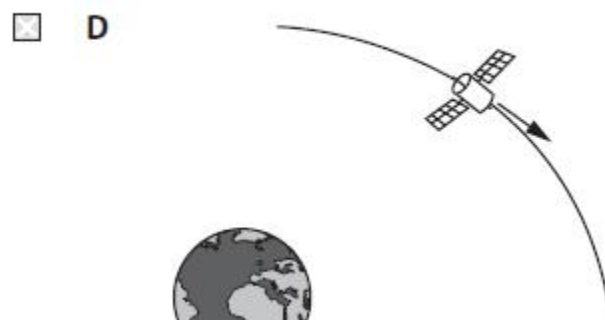
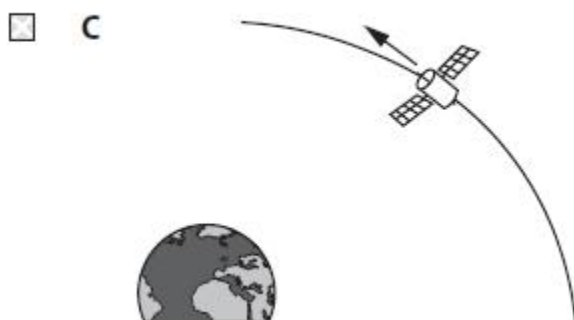
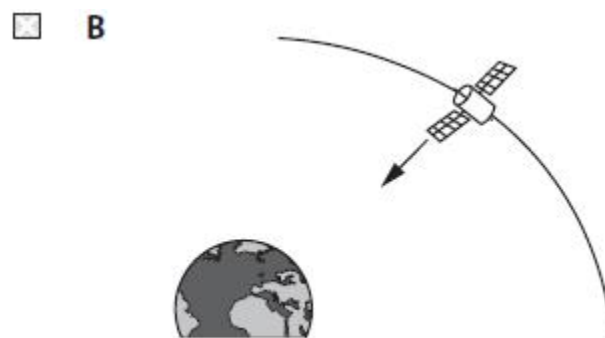
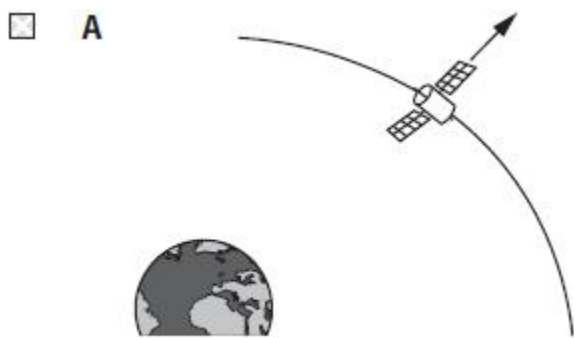
Answer the question with a cross in the box you think is correct (☒). If you change your mind about an answer, put a line through the box (☒) and then mark your new answer with a cross (☒).

Figure 15 shows an artificial satellite in orbit around the Earth.



(i) Which of these shows the direction of the force that keeps the satellite in orbit around the Earth?

(1)



(ii) The satellite travels at a constant speed around the Earth.

Explain why the satellite is accelerating even though it travels at a constant speed.

(2)

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(Total for question = 3 marks)

Q2.

Which row has two correct statements about black holes?

(1)

	the gravitational field of a black hole	a black hole is formed when
☐ A	allows only electromagnetic radiation to escape	a nebula collapses
☐ B	allows nothing to escape	a very large star collapses
☐ C	allows nothing to escape	a nebula collapses
☐ D	allows only electromagnetic radiation to escape	a very large star collapses

(Total for question = 1 mark)

Q3.

Answer the question with a cross in the box you think is correct ☐ . If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☐ .

The Moon orbits the Earth.

Which of these describes the Moon?

(1)

- ☐ **A** an asteroid
- ☐ **B** a comet
- ☐ **C** a nebula
- ☐ **D** a natural satellite

(Total for question = 1 mark)

Q4.

Answer the question with a cross in the box you think is correct ☐ . If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☐ .

The Sun is at the centre of our Solar System.

The planets orbit the Sun.

Which planet is nearest to the Sun?

(1)

- ☐ **A** Jupiter
- ☐ **B** Mars
- ☐ **C** Mercury
- ☐ **D** Venus

(Total for question = 1 mark)

Q5.

Answer the question with a cross in the box you think is correct ☐. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☐.

Which of these planets is at the greatest distance from the Sun?

(1)

- ☐ A Jupiter
- ☐ B Mars
- ☐ C Neptune
- ☐ D Venus

(Total for question = 1 mark)

Q6.

(a) Put a cross (☒) in the box next to your answer.

Which of these is the biggest?

(1)

- ☐ **A** the Solar System
- ☐ **B** a galaxy
- ☐ **C** a nebula
- ☐ **D** the Universe

(b) These are four stages in the evolution of a star similar to the Sun.
They are **not** in the correct order.

1. main sequence star
2. white dwarf
3. red giant
4. nebula

Write down the stages in the correct order.

(2)

The first stage has been done for you.

..... nebula

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(c) (i) The chart shows the electromagnetic (EM) spectrum.
Some parts of the spectrum have been labelled.

radio	P	Q	visible light	R	S	gamma rays
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State the name of part **Q**.

(1)

(ii) Three telescopes using different parts of the spectrum have been added to the chart.

radio	P	Q	visible light	R	S	gamma rays
Jodrell Bank			Hubble			Compton

Jodrell Bank is located near Manchester, whereas Hubble and Compton are in space.

Explain why some telescopes are located outside the Earth's atmosphere.

(2)

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*(d) Describe how modern telescopes have contributed to our understanding of the Universe.

(6)

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(Total for Question is 12 marks)