Earth & The Solar System

Question Paper

Course	CIE IGCSE Physics
Section	6. Space Physics
Topic	Earth & The Solar System
Difficulty	Hard

Time Allowed 10

Score /5

Percentage /100

Question 1

Select the combination which best defines and describes an accretion disc.

1. Gases rotating around a star
2. Ring of rocky material
3. Leads to formation of orbiting planets
4. Explains the range of elements in rocky planets
5. Explains the range of elements in the parent star

A. 1, 3 and 5

B. 2, 3 and 5

C. 1, 3 and 4

D. 2, 3 and 4

[1 mark]

Question 2

The Earth and Moon are held together by a gravitational force acting between them.

Which row describes possible changes to the mass of the Earth and the distance between the Earth and the Moon that would cause the gravitational force to increase?

	Mass of Earth	Distance between the Earth and the Moon
A	Double	Drop to one quarter
B	Stay the same	Stay the same
C	Halve	Stay the same
D	Drop to one quarter	Double

[1 mark]

Question 3

Extended tier only

The orbit of Venus around the Sun is treated as a circular path with an average radius of 108.2 million km. The orbital period of Venus is 225 days.

What is the orbital speed of Venus?

A. 40 000 km / h

B. 62 900 km / h

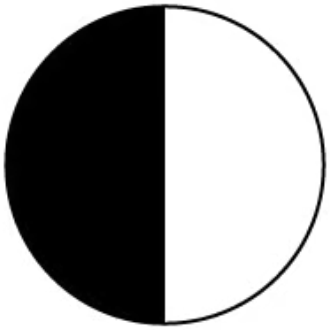
C. 126 000 km / h

D. 810 000 km / h

[1 mark]

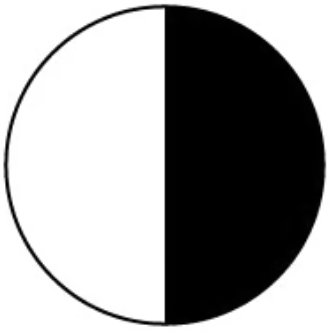
Question 4

The diagram shows a phase of the Moon.

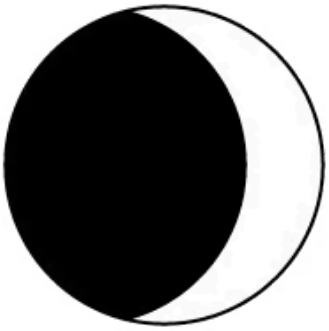


Which of the four options shows the Moon 7 days later?

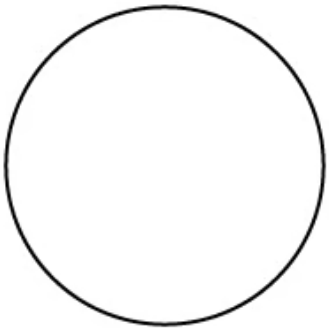
A



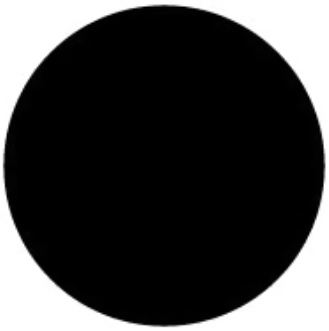
B



C



D



[1 mark]

Question 5

Extended tier only

The table shows some planetary data for planets in our Solar System

Planet	Orbital distance / million km	Orbital duration / days or years	Density / kg/m^3	Surface Temperature/ °C	Uniform Surface Gravitational Field Strength/ N/kg
Mercury	57.9	88 days	5427	350	3.7
Venus	108.2	225 days	5243	460	8.9
Earth	149.6	365 days	5514	20	9.8
Mars	227.9	687 days	3933	-23	3.7
Jupiter	778.6	11.9 years	1326	-120	23.1
Saturn	1433.5	29.5 years	687	-180	9.0
Uranus	2872.5	75 years	1271	-210	8.7
Neptune	4495.1	165 years	1638	-220	11.0

What is the orbital speed of Mars?

A. 8.68×10^4 m/hr

B. 1.38×10^7 m/hr

C. 8.68×10^7 m/hr

D. 2.08×10^9 m/hr

[1 mark]