



EXAM PAPERS PRACTICE

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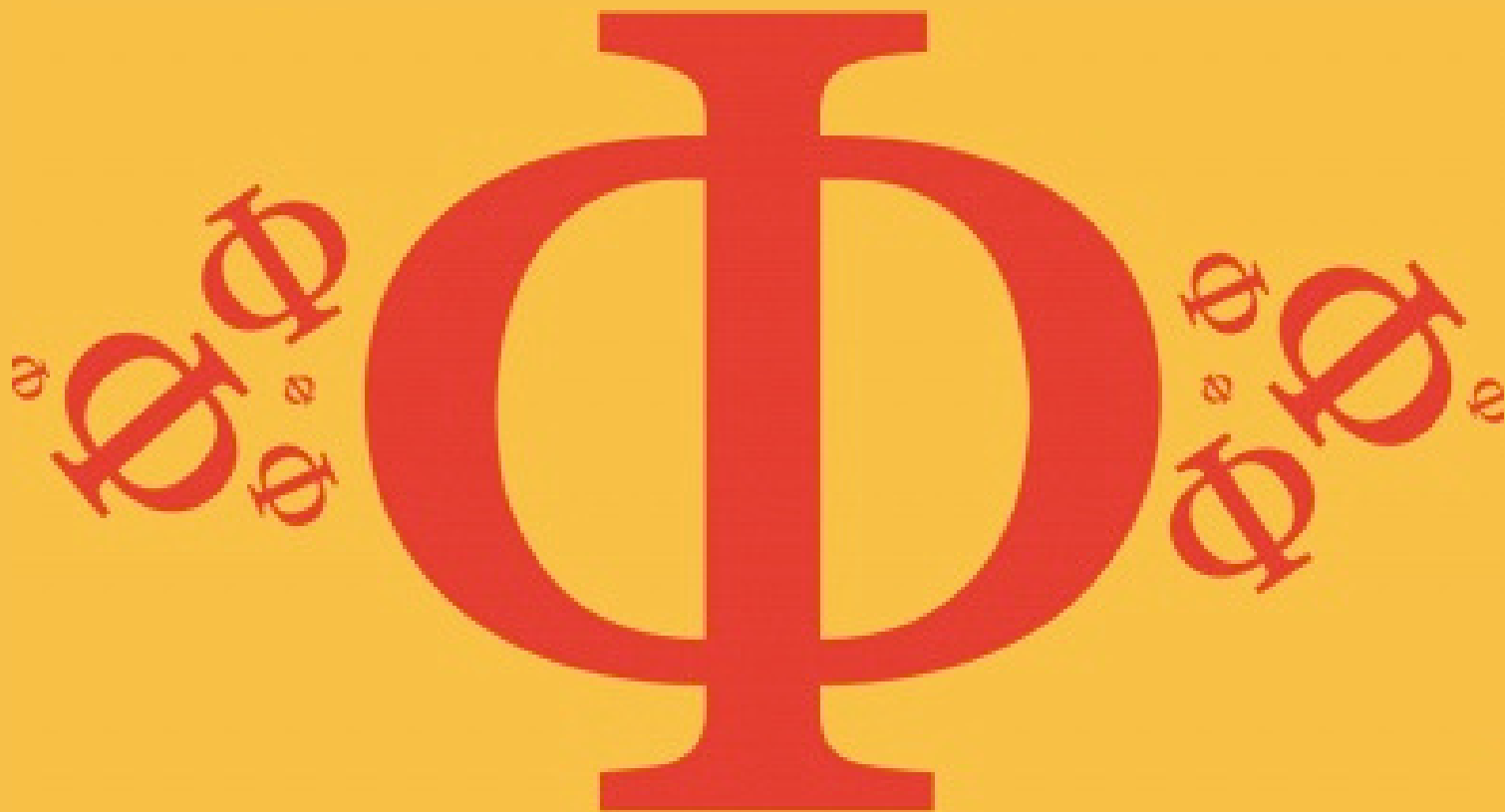
Detailed mark scheme

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thoroughly prepare you

10.1 Describing Fields

Easy



PHYSICS

IB HL

10.1 Describing Fields

Question Paper

Course	DP IB Physics
Section	10. Fields (HL only)
Topic	10.1 Describing Fields
Difficulty	Easy

EXAM PAPERS PRACTICE

Time allowed: 20
Score: /10
Percentage: /100

Question 1

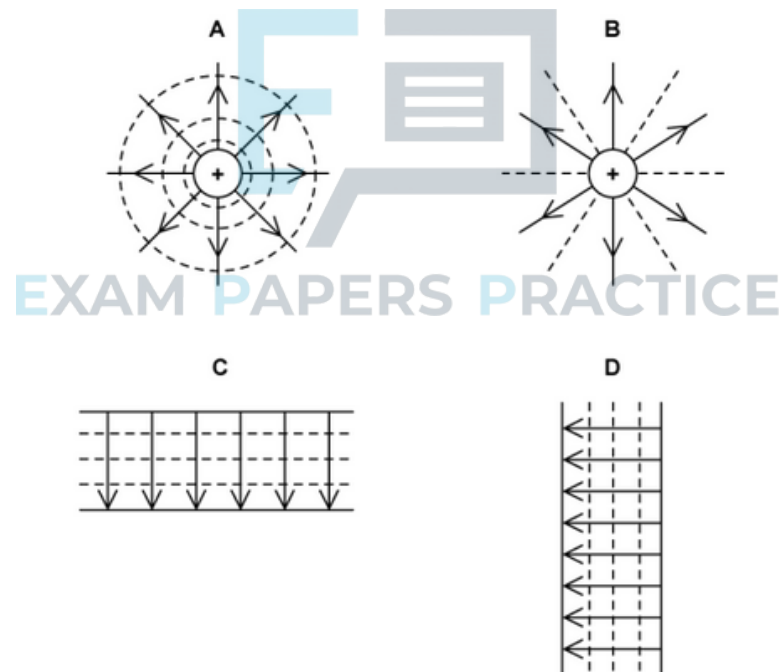
Which of the following correctly describes the value of the gravitational potential at a point infinitely far away from every massive body in the universe?

- A. ∞
- B. $-\infty$
- C. 0
- D. π

[1 mark]

Question 2

Which of the diagrams is not an accurate representation of equipotential lines?



[1 mark]

Question 3

Which of the following terms best describes the shape of an electric field created by a point charge?

- A. Radial
- B. Uniform
- C. Inverse
- D. Vector

[1 mark]

Question 4

The gravitational field strength at a point P in a gravitational field is defined as:

The force...

- A. per unit mass on a mass placed at P
- B. on a mass placed at P
- C. per unit mass on a small point mass placed at P
- D. on a small point mass placed at P

[1 mark]

Question 5

An equipotential is perpendicular to a field line:

- A. for both electric and gravitational fields
- B. for electric fields only
- C. for gravitational fields only
- D. for neither electric or gravitational fields

[1 mark]

Question 6

Which of the following statements regarding gravitational potential is incorrect?

- A. It is analogous to the electric potential at a point in an electric field
- B. It is a vector quantity
- C. It is defined as negative because work must be done on a mass to move it to infinity
- D. It is inversely proportional to the distance between masses

[1 mark]

Question 7

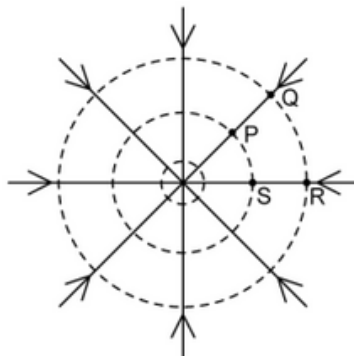
Which of the following statements is not true about equipotential surfaces in a uniform electrostatic field?

- A. The equipotential lines are straight
- B. The equipotential lines are evenly spaced
- C. The equipotential lines become progressively further apart
- D. The equipotential lines are perpendicular to the field lines

[1 mark]

Question 8

The diagram below shows the field lines and equipotential lines around an isolated negative point charge.



Which one of the following statements, when a small charge is moved in the field, is incorrect?

- A. When the small charge is moved from Q to P or R to S the work done is the same in each case
- B. The small charge has a larger potential energy at Q than at S
- C. When the small charge is moved from Q to R it is twice the work done in moving it from P to S
- D. The small charge has a larger electric potential energy at R than at S

[1 mark]

Question 9

Which of the following is incorrect regarding the similarities between gravitational and electrostatic fields?

- A. The field lines around a point mass and negative point charge are identical
- B. The work done in each field is either the product of the mass and change in potential or charge and change in potential
- C. The gravitational potential and electric potential both have a $\frac{1}{r}$ relationship
- D. The gravitational and electrostatic forces are always attractive

[1 mark]

Question 10

What are the standard units of gravitational potential?

- A. J
- B. V
- C. N kg^{-1}
- D. J kg^{-1}

[1 mark]