| Roll Number | | |
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A

# INDIAN SCHOOL MUSCAT
# SECOND PERIODIC ASSESSMENT

## PHYSICS

CLASS: XI | Sub. Code: 042 | Time Allotted: 50 mts.

06.01.2020 | Max. Marks: 20

***GENERAL INSTRUCTIONS:***

All questions are compulsory. There are 11 questions in all.
Take g = $10m/s^2$

1. Oil is poured to calm sea waves. Explain, why? 1
2. The blood pressure at the feet is more than the blood pressure at the head. Give reason. 1
3. When we try to close a water tap with our fingers, fast jets of water gush through the openings between our fingers. Explain, why? 1
4. Define coefficient of viscosity and give its SI unit. 1
5. During wind storm, light roofs are blown off. Why? 1
6. Give an expression for Reynold's number and prove that it is a dimensionless constant. 2
7. Derive an expression for excess pressure inside a liquid drop. 2
8. A 50kg girl wearing high heel shoes balances on a single heel. The heel is circular with a diameter 2.0cm. What is the pressure exerted by the heel on the horizontal floor? 2
9. State and prove Bernoulli's theorem of a liquid having streamline flow. 3
10. Define surface energy? Obtain a relationship between surface tension and surface energy. 3
11. Define terminal velocity. Derive an expression for terminal velocity attained by a spherical body falling through a viscous medium. 3

**End of the Question Paper**

| Roll Number | | |
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B

# INDIAN SCHOOL MUSCAT
# SECOND PERIODIC ASSESSMENT

## PHYSICS

CLASS: XI | Sub. Code: 042 | Time Allotted: 50 mts.

06.01.2020 | Max. Marks: 20

***GENERAL INSTRUCTIONS:***

All questions are compulsory. There are 11 questions in all.

Take g = $10 m/s^2$

1. It is easier to wash clothes in hot water soap solution. Why? 1
2. How do ploughing of fields help in preservation of moisture in soil? 1
3. It is difficult to separate two sticky plates of glass wetted with water. Why? 1
4. State Pascal's law. 1
5. A man standing on the platform just near the railway line be sucked in by a fast moving train. Explain. 1
6. A 60kg girl wearing high heel shoes balances on a single heel. The heel is circular with a diameter 4.0cm. What is the pressure exerted by the heel on the horizontal floor? 2
7. Derive an expression for excess pressure inside a liquid drop. 2
8. Give an expression for Reynold's number and prove that it is a dimensionless constant. 2
9. Define terminal velocity. Derive an expression for terminal velocity attained by a spherical body falling through a viscous medium. 3
10. a) Give two differences between streamline flow and turbulent flow. 3
    b) Derive the equation of continuity for steady flow of an incompressible fluid.
11. Define surface energy? Obtain a relationship between surface tension and surface energy. 3

**End of the Question Paper**

| Roll Number | | |
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C

# INDIAN SCHOOL MUSCAT
# SECOND PERIODIC ASSESSMENT

## PHYSICS

CLASS: XI | Sub. Code: 042 | Time Allotted: 50 mts.

06.01.2020 | Max. Marks: 20

***GENERAL INSTRUCTIONS:***

All questions are compulsory. There are 11 questions in all.
Take g = 10m/s$^2$

| | | | |
|---|---|---|---|
| 1. | | The blood pressure at the feet is more than the blood pressure at the head. Give reason. | 1 |
| 2. | | State Torricelli's theorem. | 1 |
| 3. | | It is easier to wash clothes in hot water soap solution. Why? | 1 |
| 4. | | Two ships moving close to each other may be pushed towards each other and hence danger of collision. Why? | 1 |
| 5. | | When we try to close a water tap with our fingers, fast jets of water gush through the openings between our fingers. Explain, why? | 1 |
| 6. | | Give an expression for Reynold's number and prove that it is a dimensionless constant. | 2 |
| 7. | | A 60kg girl wearing high heel shoes balances on a single heel. The heel is circular with a diameter 4.0cm. What is the pressure exerted by the heel on the horizontal floor? | 2 |
| 8. | | Derive an expression for excess pressure inside a liquid drop. | 2 |
| 9. | | Define surface energy? Obtain a relationship between surface tension and surface energy. | 3 |
| 10. | | Define terminal velocity. Derive an expression for terminal velocity attained by a spherical body falling through a viscous medium. | 3 |
| 11. | a) | Give two differences between streamline flow and turbulent flow. | 3 |
| | b) | Derive the equation of continuity for steady flow of an incompressible fluid. | |

**End of the Question Paper**