Practice Test: Force, Motion, & Gravity Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Period:\_\_\_\_\_\_

1. When an unbalanced force acts on an object, what happens to its motion?

2. When balanced forces act on an object, what happens to its motion?

3. What determines the gravitational force of an object?

4. If a ball and a marble are dropped from the same height at the same time, which would hit the ground first?

5. How does distance relate to the force of gravity?

6. Two forces act on an object. One force is 20N east and one is 10N west. What is the net force on the object?

7. Why does it take longer for a car to stop when it is wet?

8. The tendency of an object to resist change in its motion is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

9. What is the weight of a brick that has a mass of 2kg? (remember, on Earth things accelerate at 9.8 m/s2)

10. What happens when two forces act in the same direction?

11. If you are swimming in a pool and you push against the water with your hands to move your body, which of Newton’s laws are illustrated when the water pushes back against your hand?

12. If an orange falls from a tree and its air resistance is .02N and the gravitational force is 1N, what is the net force on the orange?

13. What is free fall?

14. If a book is experiencing 1N of downward force from gravity, 1N of upward force from a table, what will happen to the motion of the book?

15. According to the Law of Universal Gravitation, all objects \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_each other.

16. If Saturn has more mass than Earth, compare the force of gravity in these two places.

17. Which law relates force to acceleration?

18. What type of force results in no change in motion?

19. Can forces be added together if they are working on the same object?

20. Which law is in control of a spacecraft which cruises through space at a constant speed, without using any fuel?

21. For one team to win in a tug-of-war contest, what type of force must they apply and in what direction must they apply it?

22. When does an object have momentum?

23. Why would you weigh less on the moon?

24. What is Newton’s First Law?

25. If you have a 10kg box and you fill it with 20kg of sand, what have you affected? (circle all)

Mass Momentum Weight Inertia Volume Friction

26. Describe projectile motion and give an example.

27. What makes it difficult to move a really massive object such as a bus?

28. What is weight?

29. What happens to an object that has a net force of zero?

30. What is a Newton?

31. Relate Newton’s 3rd Law to a rocket being launched.

32. Is mass or weight related to the force of gravity?

33. Why is it possible to skate on ice and not on cement?