(Olympiad Champs Question)

Measurement Temperature

Multiple Choice Questions

CHALLENGE A

1. What is the temperature outside on a snowy day? Choose the more reasonable answer.

(a) $40^0 C$ (b) $0^0 C$

(c) $50^0 C$ (d) $63^0 C$

2. Pick the odd one out.

(a) Meter (b) Centimeter

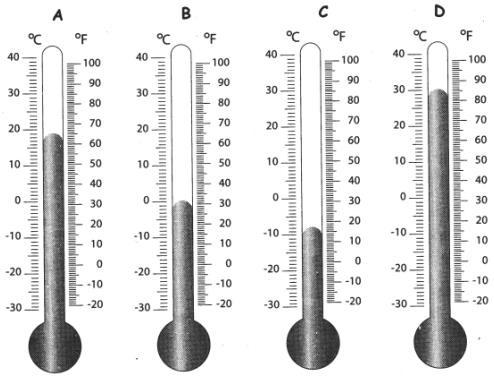
(c) Degree (d) Kilometer

3. What is the temperature of a hot barbecue grill? Choose the more reasonable

(a) $260^0 C$ (b) $40^0 C$

(c) $-10^0 C$ (d) $10^0 C$

4. Which thermometer best represents the temperature 65^0 F?



(a) A (b) B

(c) C (d) D

5. _____ ,s the instrument that is used to Measure the temperature.

(a) Thermo-scope (b) Thermometer

(c) Thermo-bar (d) Thermo-scale

6. Meter: Length::_____; Temperature.

(a) Celsius (b) Fahrenheit

(c) Degree (d) Gram

Directions (Qs. 7 to 11): Convert the following given temperatures from degree Fahrenheit- to degree Celsius.

7. $77^0 F = \_\_\_\_\_^0 C$

(a) 28 (b) 25

(c) 26 (d) 45

8. $203^0 F = \_\_\_\_\_^0 C$

(a) 95 (b) 75

(c) 85 (d) 78

9. $86^0 F = \_\_\_\_\_^0 C$

(a) 20 (b) 30

(c) 62 (d) 35

10. $176^0 F = \_\_\_\_\_^0 C$

(a) 85 (b) 78

(c) 65 (d) 80

11. $212^0 F = \_\_\_\_\_^0 C$

(a) 102 (b) 103

(c) 101 (d) 100

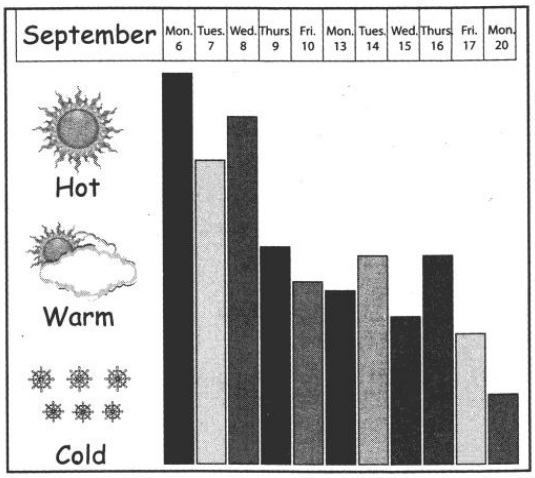
CHALLENGE B

12. Match the following:

List I		List II	
A	Temperature of boiling water	1	$98.6^0 F$
B	Temperature of freezing water	2	$100^0 C$
C	Normal temperature of human body	3	$32^0 F$

	A	B	C
(a)	1	2	3
(b)	3	2	1
(c)	2	3	1
(d)	1	3	2

Directions (Qs. 13 to 15): By studying the temperature chart for the month of September, answer the following questions.



13. The coldest day of the month is

(a) Monday (b) Tuesday

(c) Wednesday (d) Thursday

14. Second highest temperature was measured on

(a) 6+h September

(b) 7+h September

(c) 8+h September

(d) 9th September

15. 15. Which of the following is correct with respect to the graph.

(a) Gradual increase in temperature

(b) Gradual decrease in temperature

(c) No change in temperature

(d) None of these

16. Choose the correct option.

(a) $85^0 C = 105^0 F$ (b) $50^0 C = 120^0 F$

(c) $35^0 C = 95^0 F$ (d) $80^0 C = 176^0 F$

17. An industrial machine heats up to $161^0 F$ when it's being used. After being unused for an hour the temperature drops to $144^0 F$. How much did the machine cool off?

(a) $17^0 F$ (b) $16^0 F$

(c) $18^0 F$ (d) $19^0 F$

18. Megan measured the temperature of her soda and found that it was $47^0 F$. After sitting out for an hour it had warmed by 21^0. What was the temperature of soda after an hour?

(a) $69^0 F$ (b) $58^0 F$

(c) $26^0 F$ (d) $68^0 F$

19. 19. Read the statement and choose the correct option.

Statement A: $\left({}^0C \times 9/5\right) + 32 = {}^0F$.

Statement B: $\left({}^0C \times 9/5\right) - 32 = {}^0F$.

(a) Only statement A is true.

(b) Only statement B is true.

(c) Both A and B are true.

(d) Both A and B are false.

Directions (Qs. 20 to 23): Convert the following given temperatures from degree Celsius to degree Fahrenheit.

20. $80^0C = \_\_\_\_\_^0F$

(a) 175^0F (b) 80^0F

(c) 60^0F (d) 176^0F

21. $95^0C = \_\_\_\_\_^0F$

(a) 203^0F (b) $\_200^0F$

(c) 204^0F (d) 209^0F

22. $30^0C = \_\_\_\_\_^0F$

(a) 65^0F (b) 78^0F

(c) 86^0F (d) 75^0F

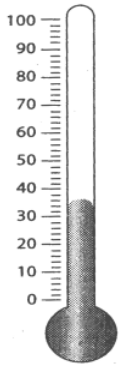
23. $15^0C = \_\_\_\_\_^0F$

(a) 59^0F (b) 79^0F

(c) 47^0F (d) 76^0F

Directions (Qs. 24 to 29): Choose the correct option by studying the readings on the thermometer.

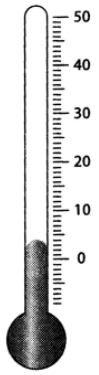
24. What temperature is shown on the thermometer?



(a) 33 degree (b) 36 degree

(c) 38 degree (d) 37 degree

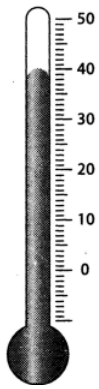
25. What temperature is shown on the thermometer?



(a) 4 degree (b) 3 degree

(c) 2 degree (d) 8 degree

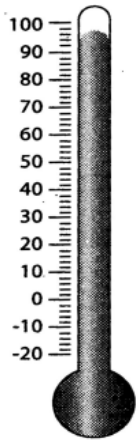
26. What temperature is shown on the thermometer?



(a) 39 degree (b) 40 degree

(c) 42 degree (d) 50 degree

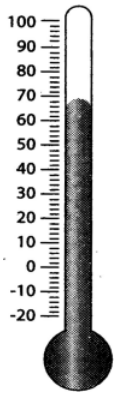
27. What temperature is shown on the thermometer?



(a) 97 degree (b) 95 degree

(c) 94 degree (d) 100 degree

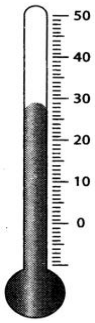
28. What temperature is shown on the thermometer?



(a) 69 degree (b) 70 degree

(c) 68 degree (d) 66 degree

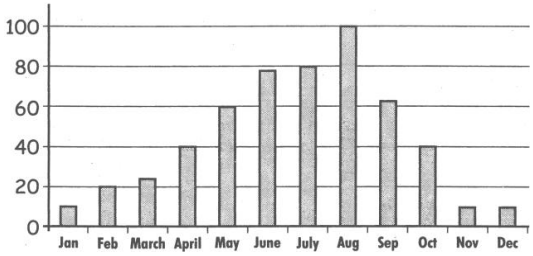
29. What temperature is shown on the thermometer?



(a) 30 degree (b) 28 degree

(c) 24 degree (d) 32 degree

Directions (Qs. 30 to 37): Below is the bar graph of the average monthly temperature. Study the graph and answer the questions.



30. Which is colder _____ March or April?

(a) March

(b) April

(c) Both are equally cool.

(d) None of these.

31. July is _____ degree warmer than April.

(a) 30 (b) 40

(c) 38 (d) 42

32. Which month had an average temperature of 78 degree?

(a) May (b) June

(c) July (d) September

33. Match the equivalent value of Fahrenheit scale with the Celsius scale.

List I		List II	
A	$167^0 F$	1	$65^0 C$
B	$149^0 F$	2	$55^0 C$
C	$113^0 F$	3	$75^0 C$
D	$131^0 F$	4	$45^0 C$

	A	B	C	D
(a)	3	1	4	2
(b)	2	1	3	4
(c)	1	2	3	4
(d)	4	1	3	2

34. James was sitting inside on snowy day and noticed it was $12^0 F$ outside. When he looked a few hours later it was $21^0 F$ how much did the temperature rise?

(a) $7^0 F$ (b) $11^0 F$

(c) $9^0 F$ (d) $33^0 F$

35. The temperature at 7:00 AM was $61^0 F$. the temperature at 11:30 AM was $38^0 F$. what was the change in temperature between 7:00 AM and 11:30 AM?

(a) 46^0 (b) 99^0

(c) 25^0 (d) 23^0

36. The average temperature for January was $35^0 F$. the average temperature for February was 9^0 warmer. What was the average temperature for February?

(a) $37^0 F$ (b) $24^0 F$

(c) $44^0 F$ (d) $48^0 F$

37. Joey went to the park at 2:30 and it was $33^0 F$. by the time she left at 4:30, it was 18^0 warmer. What was the temperature when she left?

(a) $51^0 F$ (b) $50^0 F$

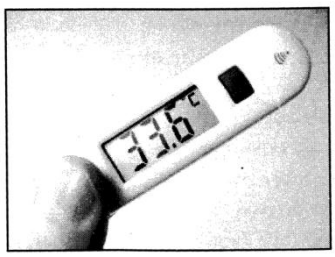
(c) $15^0 F$ (d) $49^0 F$

38. Braiden heated up some pizza in the microwave. Before he put it in, it was $22^0 F$. when he got it out it was $77^0 F$. how much did the microwave heat it up?

(a) $55^0 F$ (b) $56^0 F$

(c) $54^0 F$ (d) $57^0 F$

39. Choose the correct option.



(a) The temperature in the thermometer is the normal human body temperature.

(b) The temperature in the thermometer is below the normal human body temperature.

(c) The temperature in the thermometer is above the normal human body temperature.

(d) None of these.

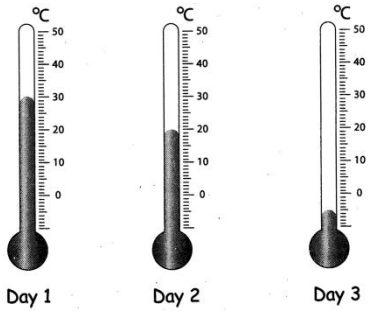
40. Bianca made herself a cup of hot chocolate that was $79^0 F$. After she put it in the

microwave the temperature rose by What was the temperature of hot chocolate after she heated it?

(a) $111^0 F$ (b) $112^0 F$

(c) $117^0 F$ (d) $115^0 F$

41. What is the difference between the temperature of day 3 and day 1?



(a) 10^0 (b) 15^0

(c) 25^0 (d) 55^0

42. The temperature first rises by $18^0 C$ and then falls by $23^0 C$. If the initial temperature is $27^0 C$. What is final temperature?

(a) $22^0 C$ (b) $23^0 C$

(c) $24^0 C$ (d) $25^0 C$

43. Normal human body temperature is ____ $^0 F$.

(a) 37 (b) 98.8

(c) 98.6 (d) 98.7

44. $75^0 C$ is _____ $^0 F$.

(a) 176 (b) 167

(c) 107 (d) 112

45. $302^0 F$ is _____ $^0 C$.

(a) 105 (b) 155

(c) 150 (d) 205

46. Number of equal divisions in the Fahrenheit scale is :

(a) 100 (b) 108

(c) 180 (d) 212

47. The scales of temperature are named after:

(a) Instruments

(b) scientists

(c) places

(d) none of these

48. The temperature of an object is found to be $167^0 F$. what is its temperature in $^0 C$?

(a) $102^0 C$

(b) $75^0 C$

(c) $167^0 C$

(d) $98^0 C$

49. The maximum temperature on a day is $35^0 C$ and the minimum temperature is $25^0 C$. The difference of these temperatures, on Fahrenheit scale is :

(a) $25^0 F$

(b) $75^0 F$

(c) $50^0 F$

(d) $100^0 F$

50. The highest temperatures recorded in 4 different countries are listed below.

Highest temperature	Country

$127.6^0 F$	India
$114.8^0 F$	Nepal
$136.4^0 F$	Srilanka
$134.0^0 F$	Pakistan

What is the highest temperature listed above?

(a) $127.6^0 F$ (b) $114.8^0 F$

(c) $136.4^0 F$ (d) $134.0^0 F$

51. Clinical thermometers are marked in _____ scale.

(a) Celsius (b) Fahrenheit

(c) Both A and B (d) None of these

52. The temperature of first object is $36^0 C$ and that of second object is $36^0 F$. which is hotter than the other?

(a) First object

(b) Second object

(c) Both have same hotness

(d) Cannot be determined

53. The body temperature of a patient is $5.4^0 F$ above the normal temperature. His body temperature now in $^0 C$ is:

(a) $38^0 C$ (b) $98^0 C$

(c) $50^0 C$ (d) $40^0 C$

54. Clinical thermometers are marked in _____ scale.

(a) Celsius (b) Fahrenheit

(c) Both (d) None of these

Solutions with Explanation

CHALLENGE A

1. (b) Since there is snow outside, the most reasonable temperature would be the freezing temperature of water i.e. $0^0 C$.

2. (c) Degree is the odd one out as it is the unit of measurement of temperature whereas all other are units of measurement of length.

3. (a) The temperature in the hot barbecue grill is very hot and intolerable by humans. Thus, $260^0 C$ is the most reasonable answer?

4. (a) $65^0 F$ can be seen in the first thermometer.

5. (b) Thermometer is the instrument that is used to measure the temperature.

6. (c) As meter is the unit of measurement of length, similarly degree is the unit of measurement of temperature. Celsius and Fahrenheit are the scales in which temperature is measured.

7. (b) $77-32=45; 45\times 5=225; 225\div 9=25^0 C$

8. (a)

$203-32=171; 171\times 5=855; 855\div 9=95^0 C$

9. (b) $86-32=54; 54\times 5=270; 270\div 9=30^0 C$

10. (d) 176-32=144;144×5=720;720÷9=80^{0}C

11. (d) 212-32=180;180×5=900;900÷9=100^{0}C

CHALLENGE B

12. (c)

13. (a) As can be seen in the diagram, the minimum temperature is on 20 September i.e.
On Monday.

14. (c) The second highest peak is on 8th September, thus it is the second most hottest Day.

15. (b) As seen in the graph, the temperature is decreasing gradually and the days are becoming cooler, thus there is a gradual decrease in temperature.

16. (d)
80^0C=80×9=720;720÷5=144;144+32=176^0F.

17. (a) temperature of machine when it is being used = $161^0 F$; temperature of machine when left unused for an hour= $144^0 F$, Drop in temperature of the machine = (161- 144) = $17^0 F$.

18. (d) Temperature of soda earlier= $47^0 F$. temperature of soda after an hour= 21^0 warmer = $(47+21)^0 F = 68^0 F$.

19. (a) $(^0C \times 9/5)+32 = ^0 F$ is the correct conversion equation to convert Celsius into Fahrenheit.

20. (d) 80×9=720; 720÷5=144; 144+32=176^0F

21. (a) 95×9=855; 855÷5=171; 171+32=203^0F

22. (c) 30×9=270; 270÷5=54; 54+32=86^0F

23. (a) 15×9=135; 135÷5=27; 27+32=59^0F

24. (b) The tip of the red fluid shows the temperature. The level of red fluid is between 30 and 40. And as seen there are 5 scales in between it, meaning each scale = 2 degree. Thus the temperature as seen in the thermometer is 36 degree.

25. (a) The tip of the red fluid shows the temperature. The level of red fluid is between 0 and 10. And as seen there are 5 scales in between it, meaning each scale= 2 degree. Thus the temperature as seen in the thermometer is 4 degree.

26. (b) The tip of the red fluid showing the temperature is at 40 degree. Thus the temperature that is shown by the thermometer is 40 degree.

27. (a) The tip of the red fluid shows the temperature. The level of red fluid is between 90 and 100. And as seen there are 5 scales in between it, meaning each scale= 2 degree. And the red fluid ends between the 3rd and 4th scale i.e. between 96 and 98 degree. Thus the temperature as seen in the thermometer is 97 degree.

28. (c) The tip of the red fluid shows the temperature. The level of red fluid is between 60 and 70. And as seen there are 5 scales in between it, meaning each scale= 2 degree. Thus the temperature as seen in the thermometer is 68 degree.

29. (b) The tip of the red fluid shows the temperature. The level of red fluid is between 20 and 30. And as seen there are 5 scales in between it, meaning each scale= 2 degree. Thus the temperature as seen in the thermometer is 28 degree.

30. (a) March is colder than April since its average monthly temperature is less than that of April.

31. (b) The temperature of July is 80 degree and that of April is 40 degree. Thus July is 40 degree warmer than April.

32. (b) June had average monthly temperature of 78 degree as it can be seen that it is slightly below 80 degrees.

33. (a)

34. (c) Rise in temperature= $(21-12)^0 F = 9^0 F$..

35. (d) change in temperature between 7:00 AM and 11:30 AM= Temperature at 7:00 AM - Temperature at 11:30 AM = $(61-38)^0 F = 23^0 F$.

36. (c) The average temperature for January $= 35^0 F$; The average temperature for February = 9^0 warmer than the temperature of January. Average temperature for February $(35+9)^0 F = 44^0 F$.

37. (a) Temperature at 2:30 = $33^0 F$; temperature at 4:30= 18^0 warmer than the temperature at $2:30 = (18+33)^0 F = 51^0 F$.

38. (a) temperature of pizza before heating = $22^0 F$; Temperature of pizza after heating = $77^0 F$; The microwave heat up the pizza by $(77-22)^0 F = 55^0 F$.

39. (b) The temperature in the thermometer is below the normal human body temperature because the normal body temperature of human body is $37^0 C$ and the temperature in the thermometer is $33.6^0 C$.

40. (c) Temperature of hot chocolate= $(79+38)^0 F = 117^0 F$.

41. (c) 25^0

42. (a) $22^0 C$

43. (c)

44. (b) $75 \times \frac{9}{5} + 32 = 167^0 F$

45. (c) $(302-32) \times \frac{5}{9} = 150^0 C$

46. (c)

47. (b)

48. (b) $(167-32) \times \frac{5}{9}$

$= 135 \times \frac{5}{9} = 75^0 C$

49. (c) $35^0 C - 25^0 C = 10^0 C$

$10^0 C = \left(10 \times \frac{9}{5}\right) + 32$

$= 18 + 32 = 50^0 F$.

50. (c)

51. (b)

52. (a)

53. (d) Temperature $= 98.6^0 F + 5.4^0 F$

$= 104.0^0 F$

$= 104^0 F$

$(104-32) \times \frac{5}{9} = 40^0 C$

54. (b)