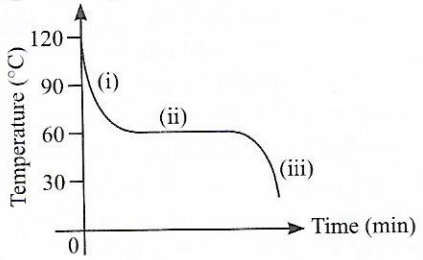
22. Match Column I with Column II and select the correct option from the given codes.

Column I	Column II
P. Richter scale	(i) Protect house
Q. Waves	(ii) Seismograph
R. Lightning rod	(iii) Earthquake
S. Charge	(iv) Electroscope

A. P-(i), Q-(iv), R-(ii), S-(iii)
B. P-(ii), Q-(iii), R-(iv), S-(i)
C. P-(iii), Q-(ii), R-(i), S-(iv)
D. P-(iii), Q-(i), R-(ii), S-(iv)

23. A solid '*X*' was heated beyond its melting point. The hot liquid at 120°C was then allowed to cool slowly. The temperature was recorded at regular time intervals until it was cooled to 25°C. The following cooling curve was obtained.



Study the curve carefully and select the correct statement(s).

I. The freezing point of '*X*' is 60°C.
II. In part (iii) of the curve, '*X*' exists in liquid state.
III. When '*X*' is heated beyond 120°C, the particles of '*X*' will lose heat energy and contraction of liquid '*X*' will take place.
IV. In part (i) of the curve, particles of '*X*' have higher kinetic energy than that of the particles in parts (ii) and (iii) of the curve.

A. II and III only
B. I and IV only
C. III only
D. I, II, III and IV

24. Read the following statements and select the correct ones.

I. Coal, petroleum and natural gas are called fossil fuels.
II. Coal and natural gas are two exhaustible resources.
III. Coke is used in the manufacture of steel.
IV. Fossil fuels are present in limited quantity.

A. I and II only
B. I and IV only
C. I, II and III only
D. I, II, III and IV

25. Arrange the given substances (I-IV) in the increasing order of their mass in grams.

I. 2×10^{23} atoms of carbon
II. 2 g atoms of oxygen
III. 25 g of iron
IV. 22.4 L of carbon dioxide at STP

A. IV < III < II < I
B. I < III < II < IV
C. III < I < IV < II
D. II < IV < I < III

26. Beena took pieces of different fibres like cotton, acrilon, rayon, polyester, nylon and silk, and burnt them one by one with a burning matchstick. After the experiment, the correct observations is/are

I. Acrilon burns vigorously with no bead formation.
II. Nylon and polyester burn slowly and form beads.
III. Silk burns slowly with a smell of burning feathers.
IV. Cotton and rayon burn with a smell of burning hair.

A. I and IV only
B. II and III only
C. IV only
D. I, II, III and IV.

27. Match column I with column II and select the correct option from the given codes.

Column I	Column II
P. Butter	(i) Foam
Q. Face cream	(ii) Aerosol
R. Milk of magnesia	(iii) Gel
S. Sponge	(iv) Emulsion
T. Automobile exhaust	(v) Sol

A. P-(iii), Q-(iv), R-(v), S-(ii), T-(i)
B. P-(iii), Q-(iv), R-(v), S-(i), T-(ii)
C. P-(iv), Q-(iii), R-(v), S-(ii), T-(i)
D. P-(ii), Q-(iii), R-(i), S-(iv), T-(v)

28. In an experiment, 50 kg of a fuel was completely burnt. The heat produced was measured to be 150,000 J. The calorific value of the fuel is

A. 3 kcal/g
B. 150,000 J
C. 3000 kJ/kg
D. 3 kJ/kg

29. Read the given statements and select the correct option.

Statement 1 : In Rutherford's gold foil experiment, very few α-particles are deflected back.

Statement 2 : Nucleus is the heavy body present in the centre of the atom.

A. Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.
B. Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.
C. Statement 1 is true and statement 2 is false.
D. Both statements 1 and 2 are false.

30. Ritwik was given four inflammable substances *P*, *Q*, *R* and *S*. He was asked to handover them to Ramesh who was the resident of a hot area (temperature, 46°C). Ritwik collected the data about the substances as shown in the table. Which substances Ritwik should not carry to the hot area where Ramesh lives?

Substance	Ignition temperature
P	40°C
Q	38°C
R	52°C
S	59°C

A. *P* and *Q*
B. *R* and *S*
C. *P* and *S*
D. *P*, *Q* and *S*

31. Raghav, a class 9 student has listed down a few properties of three substances *W*, *X* and *Y* in the given table.