

Question 24 (Answer: **D**)

- ATP is adenine joined to ribose joined to three phosphates.
- Adenine is a purine base, and the sugar is a pentose (ribose, not deoxyribose).
- There are three phosphate groups, not one.

7(a)	<i>any three from:</i> 1 breaks down / hydrolyses to / converted to, ADP / AMP, and Pi ; 2 releases energy / energy donor ; 3 reversible reaction / high turnover / can be regenerated ; 4 small / soluble, so can, diffuse / move (freely), in cell ; 5 AVP ;
7(b)	<i>any six from:</i> 1 ETC / electron flow, less / stops ; 2 no / less, energy, available / released / supplied (from electron flow) ; 3 no / fewer, H⁺ ions / protons, <u>pumped</u> to intermembrane space ; 4 no / smaller, H⁺ / proton, gradient ; 5 no / fewer, protons <u>diffuse</u> through ATP synthase ; 6 no / fewer, electrons reach, last carrier / end of chain ; 7 no / fewer, electrons can react with oxygen to form water ; 8 (oxidised) <u>NAD</u> not regenerated / lack of <u>NAD</u> ; 9 no / less, glycolysis / link reaction / Krebs cycle ; 10 AVP ;

1(a)	<i>any two from:</i> glucose (phosphate) ; fructose (phosphate / bisphosphate) ; triose phosphate ; (named) fatty acid / keto-acid ; glycerol ; amino acid ;
1(b)	<i>any four from:</i> 1 breaks down / hydrolyses to, ADP / AMP, and Pi ; 2 releases, energy / 30.5 kJ mol⁻¹ ; 3 reversible reaction / high turnover / can be regenerated ; 4 small / soluble, so can, diffuse / move (freely), in cell ; 5 AVP ;
1(c)	substrate-linked / substrate-level (phosphorylation) ;
1(d)(i)	oxygen ;
1(d)(ii)	<i>presence of oxygen:</i> 1 (ATP yield) increases / is <u>higher</u> ; <i>plus any two from:</i> 2 oxygen acts as final, electron / proton, acceptor ; 3 oxidative phosphorylation / chemiosmosis (occurs) ; 4 energy from, reduced NAD / reduced FAD / electron transport chain ; 5 proton gradient / H⁺ → into intermembrane space ; 6 ATP made in Krebs cycle ;