**1.** C

[1]

**2.** SA node is located in the wall of right atrium of heart muscle;
has characteristics of both nerve and muscle tissue;
SA node initiates each impulse;
acts as pacemaker of the heart;
no nerve impulses needed for contraction / myogenic;
connected to nerves which slow/accelerate heart rate;
impulses spread out in all directions through walls of atria;
stimulates atrial systole/contraction;
fibres in walls of atria prevent impulses from reaching ventricles;
impulses reach AV node (after atrial contraction); 6 max

[6]

**3.**

(b) SA (sino atrial) node / pacemaker receives signal to fire;

when ventricle 70% / almost full;

AV (atrio ventricular) valve opens and blood fills ventricle (to maximum) / atrial systole;

pressure increase in ventricle closes AV valve / ventricular systole;

AV node fires;

Purkinje fibres carry impulses to all areas of ventricles for simultaneous firing;

pressure increase causes semilunar valve to open;

blood pumped from ventricle to aorta / systole sound / ventricular diastole;

pressure lowers in ventricle closing semilunar valve / diastole sound;

pressure in ventricle lower than atria so AV valve opens;

increases blood ventricular volume;

both atria and ventricles are relaxed / diastole;

atria receive blood from veins;

cycle repeats; 6 max

[6]