 Question 20-28Under certain circumstance the human body must cope with gases at greater-than-normal atmospheric pressure.For example,gas pressures increase rapidly during a dive made with scuba gear because the breathing equipment allows divers to stay underwater longer and dive deeper.The pressure exerted on the human body increases by 1atmosphere for every 10meters of depth in seawater,so that at 30meters in seawater a diver is exposed to a pressure of about 4atmospheres.The pressure of the gases being breathed must equal the external pressure applied to the body.otherwise breathing is very difficult.Therefore all of the gases in the air breathed by a scuba diver at 40meters are present at five times their usual pressure.Nitrogen which composes 80percent of the air we breathe usually causes a balmy feeling of well-being at this pressure.At a depth of 5atmospheres nitrogen causes symptoms resembling alcohol intoxication known as nitrogen narcosis.Nitrogen narcosis apparently results from a direct effect on the brain of the large amounts of nitrogen dissolved in the blood.Deep dives are less dangerous if helium is substituted for nitrogen,because under these pressures helium does not exert a similar narcotic effect.As a scuba diver descends,the pressure of nitrogen in the lungs increases.Nitrogen then diffuses from the lungs to the blood and from the blood to body tissues.The reverse occurs when the diver

surfaces.the nitrogen pressure in the lungs falls and the nitrogen diffuses from the tissues into the blood and from the blood into the lungs.If the return to the surface is too rapid,nitrogen in the tissues and blood cannot diffuse out rapidly enough and nitrogen bubbles are formed .They can cause severe pains,particularly around the joints.Another complication may result if the breath is held during ascent.During ascent from a depth of 10meters,the volume of air in the lungs will double because the air pressure at the surface is only half of what it was at 10meters.This change in volume may cause the lungs to distend and even rupture.This condition is called air embolism.To avoid this event,a diver must ascent slowly,never at a rate exceeding the rise of the exhaled air bubbles,and must exhale during ascent.20.What does the passage mainly discuss?(A)The equipment divers use(B)The effects of pressure on gases in the human body(C)How to prepare for a deep dive(D)The symptoms of nitrogen bubbles in the bloodstream.21.The word "exposed to"in line 6are closest in meaning to(A)leaving behind(B)prepared for(C)propelled by(D)subjected to22.The word "exert"in line 15is closest in meaning to(A)cause(B)permit(C)need(D)change23.The word "diffuses"in line 19is closest in meaning to(A)yields(B)starts(C)surfaces(D)travels24.What happens to nitrogen in body tissues if a diver ascends too quickly.(A)It forms bubbles(B)It goes directly to the brain(C)It is reabsorbed by the lungs.(D)It has a narcotic effect. 