WASHINGTON – Leaders of two expert commissions that spent years examining the nation's ocean policies give the Congress, Bush administration and governors a near-failing grade for not moving quickly enough to address hundreds of their recommendations. The presidential panel chaired by James Watkins, a retired Navy admiral and former energy secretary, recommended in September 2004 creating a new trust fund, boosting research, improving fisheries management and consolidating federal oversight among 212 recommendations in its 610-page final report, the first federal review of ocean policy in 35 years.

The privately funded Pew Oceans Commission chaired by Leon Panetta, former President Clinton's White House chief of staff, reached many of the same conclusions a year earlier. Now, members of the former commissions have joined forces, saying the government's "D+" effort so far could imperil the oceans' health and abundance if the problems are left untended much longer.

"We're hopeful that 2006 is going to be a banner year for ocean policy reform," Watkins said Thursday. "The crisis now is to prevent an irreversible situation five to seven years from now, that will grow exponentially if we don't get on these things." Panetta agreed: "We're unified in saying to the administration and the Congress, 'We've got to wake up and deal with this crisis facing our oceans.'"
President Bush released an ocean action plan in December 2004 that included creation of a White House committee to oversee ocean policies and a proposal to cut air pollution from marine vessels in U.S. and foreign waters. Lawmakers introduced bills to adopt various commission recommendations, such as reauthorizing the primary federal law governing fisheries management and making the National Oceanic and Atmospheric Administration an agency separate from the Commerce Department.

NOAA spokesman Jordan St. John said the Bush administration has taken "aggressive and responsible action" toward better ocean policy, such as improving how coral reefs are monitored and linking nearly 60 nations within a decade to gather and share information from satellites, ocean buoys, weather stations and other surface and airborne instruments.

"We're confident as projects are completed we'll earn higher marks," he said, adding, "This administration is putting $9 billion a year into ocean-related activities."

Source: Associated Press
Earth’s General Circulation – Review of ATOC 1050

Chapter 4 of Text
Short Question 8

The Earth has seasons because

(c) its axis of rotation is tilted from the plane of orbit about the sun.

(b) its distance from the sun changes as it orbits.

(c) its albedo changes as leaves grow and fall from trees.

(d) atmospheric abundances of CO$_2$ change throughout the year.

(e) the brightness of the sun changes in a regular pattern.
Short Question 8

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See last slide
The tropics receive more radiation over the course of a year than the poles – more direct sunlight and lower albedo
Hadley circulation (named after George Hadley, a famous British Meteorologist)
The intertropical convergence zone

ITCZ
Fig. 4.8
The Coriolis effect – as viewed for the northern hemisphere

Fig. 4.9
As a consequence of the Coriolis Effect (due to Earth’s rotation), air does not travel in a N/S direction, but is turned in an E/W direction – giving rise to gradients that separate warm and cold air masses.
Short Question 8

Warm air rises over cold air because:

(c) Warm air contains more $\text{N}_2$, which is lighter than $\text{O}_2$.

(b) Warm air is less dense than cold air.

(c) The Coriolis effect is greater for cold air.

(d) The Coriolis effect is greater for warm air.

(e) None of the above
“Fronts” (cold or warm)

Fig. 4.6
$P_g = \text{Pressure Gradient Force}$

$C = \text{Coriolis Force}$

$V_G = \text{Geostrophic Wind}$