Name: Harsh Mohan Sason

1. Internal fragmentation in paged memory architecture means that with paged allocation of memory, the unstable memory at the end of a page because a process can only be allocated memory in page-sized chunks. It happens when the page is frame is too large

2. When the operating system reuses memory, it must first zero out the contents of the memory or disk because private data from one application may leak into some other application which could potentially be harmful to the system and could be a malicious application or malware.

3. Benefits of using paging as the lowest level of architecture include:

1. Efficient memory allocation
2. Efficient disk transfers
3. Efficient lookup
4. Efficient reverse lookup
5. Page granularity protection and sharing

4.

a.) Using LRU replacement policy:

Ref	**A**	**C**	**B**	**D**	**B**	**A**	**E**	**F**	**B**	**F**	**A**	**G**	**E**	**F**	**A**
1	A					X					X				X
2		C					E						X		
3			B		X				X			G			
4				D				F		X				X	

For 4-page frames, LRU has 8 fault pages on this reference pattern.

b.) Using MIN replacement policy:

Ref	**A**	**C**	**B**	**D**	**B**	**A**	**E**	**F**	**B**	**F**	**A**	**G**	**E**	**F**	**A**
1	A					X					X				X
2		C					E						X		
3			B		X				X			G			
4				D				F		X				X	

For 4-page frames, MIN has 7 fault pages on this reference pattern

c.) Using Clock Replacement Policy:

Ref	**A**	**C**	**B**	**D**	**B**	**A**	**E**	**F**	**B**	**F**	**A**	**G**	**E**	**F**	**A**
1	A					X	E						E		
2		C						F		X				F	
3			B		X				X			G			
4				D							A				X

Clock has 10 page faults on this reference pattern