**MODULE 4 S19**

**1.** Given a **Buddy system** with **7** different holes from **20** to **26**, and some   
 processes are **already in memory** as shown:

**INITIALLY**

**0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **a** | **a** |  |  |  |  |  |  | **b** | **b** | **b** | **b** | **b** | **b** |  |  |  |  |  |  |  |  | **c** | **c** |  |  |  |  | **d** | **d** | **d** | **d** |

**32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **e** | **e** |  |  |  |  |  |  | **f** | **f** | **f** | **f** | **f** | **f** |  |  |  |  |  |  |  |  |  |  | **g** | **g** | **g** |  |  |  |  |  |

**A**. A sequence of **releases** and **requests** is made as follows:

Process **h** requests **6** blocks

Process **k** requests **4** blocks

Process **g** **releases** **3** blocks

Process **e** **releases** **2** blocks

Process **n** requests **8** blocks

Process **j** requests **4** blocks

Process **m** requests **4** blocks

Process **c** **releases** **2** blocks

Process **p** requests **6** blocks

Process **r** requests **4** blocks

Show the **final** **memory layout** (by filling in the process letter) after accommodating the requests and releases.

Please note that the **header pointers** always **start** at the **lowest address**. If there are multiple pointers to the same size holes they are **chained** lowest to highest.

**Ans 1A)**

**0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **a** | **a** |  |  | **K** | **K** | **K** | **K** | **b** | **b** | **b** | **b** | **b** | **b** |  |  | **J** | **J** | **J** | **J** | **R** | **R** | **R** | **R** | **M** | **M** | **M** | **M** | **d** | **d** | **d** | **d** |

**32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **f** | **f** | **f** | **f** | **f** | **f** |  |  | **H** | **H** | **H** | **H** | **H** | **H** |  |  | **P** | **P** | **P** | **P** | **P** | **P** |  |  |