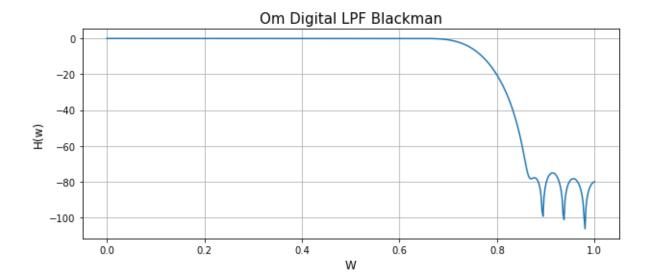```
Name: Om Kadam
Roll No: 45
Sem: V
Branch: EXTC
Year of Study: TE
Division: A
Batch: TA-3
Date: 31/08/2023
Time: 14:00
```

Problem Statement: Design a digital FIR LPF using Recntagular, Hanning, Hamming and Blackman Window

In [1]: 
```python
# Importing in-built libraries of python
import numpy as np
import matplotlib.pyplot as plt
import scipy.signal as signal
```

In [8]:
```python
# Design of FIR LPF using Blackman Window
N = 51 # Type - I
b = signal.firwin(N, cutoff = 0.75, window = 'black', pass_zero = True)
a = 1
print(np.round(b, decimals = 2))
```

```
[-0.   -0.   -0.    0.   -0.    0.    0.   -0.    0.   -0.   -0.    0.01
 -0.01  0.    0.01 -0.02  0.01 -0.   -0.02  0.04 -0.04  0.    0.07 -0.16
  0.22  0.75  0.22 -0.16  0.07  0.   -0.04  0.04 -0.02 -0.    0.01 -0.02
  0.01  0.   -0.01  0.01 -0.   -0.    0.   -0.    0.    0.   -0.    0.
 -0.   -0.   -0.   ]
```

In [9]:
```python
W, h = signal.freqz(b,a)
h_db = 20 * np.log10(abs(h))
plt.figure (figsize = (10, 4))
plt.plot (W/max(W), h_db)
plt.grid()
plt.title ('Om Digital LPF Blackman', fontsize = 15)
plt.xlabel ('W', fontsize = 12)
plt.ylabel ('H(w)', fontsize = 12)
```

Out[9]: Text(0, 0.5, 'H(w)')

Om Digital LPF Blackman