Ans 1
T staging: T4B
- skin involvement in the form of ulceration
(note that skin fixity does not count as skin involvement)

N staging: N2A
- multiple, fixed, ipsilateral axillary LN palpable

M staging: Mx
- no evidence of metastasis to contralateral breast or different organs on clinical examination. Thus unknown status of metastasis

TNM staging : $T_{4b}N_{2a}M_x$
AJCC 8th edition stage: atleast III B

Ans 2
The swelling of the ipsilateral arm can be explained by invasion of ipsilateral axillary LN, by tumor cells This leads to obstructed drainage of lymph of the arm, and thus a generalised lymphedema of the ipsilateral arm.

Ans 3
To confirm my clinical suspiscion
TRUCUT/ CORE NEEDLE BIOPSY: from the breast lump (Gold Standard Tool)
Mammography of Bilateral breast
Serum CA-15.3

To detect spread of the disease:
CECT Thorax
USG whole abdomen
Tc^{99} Bone scan- whole body
MRI Brain
18 FDG, whole body PET-CT scan
CBC, LFT, KFT, TFT

Ans 4
Special test necessary for molecular classification of breast CA: Immunohisto chemistry (IHC) from tissue block
-> ER, PR, Her2Neu, Ki67 index
Knowing the IHC status helps in targeted therapy of the malignancy, I.e,

1. ER/PR +ve = aromatase -ve / selctive estrogen receptor modulator
2. Her2Neu +ve = Herceptin (Trastuzumab)/ Hertuzumab

Furthermore, molecular assays, eg oncotype Dx, or 21 gene recurrence score, assists in the prognosis of the patient.

Ans 5
- Assess tumour size, nodal size and stage of the disease
- If there is need to downstage the disease prior to surgery, use neoadjuvant chemotherapy. If no, plan definitive surgery, I.e Modified radical mastectomy with axillary lymph node dissection (MRM with ALND) and send the surgical specimen for histopathological examination and IHC.
[MRM + ALND is chosen over BCS as the patient is suffering from Invasive disease]
- The decision of adjuvant chemotherapy (3-6 cycles), and Post-op radiation depends on the biopsy of report, containg the margin status, LN dissection, lymphovascular invasion, perineural invasion, residual tumor, multifocal disease, high grade of tumor, high Bloom-Richardson score.
- The case of ER/Or +ve, AI/SERM is used for 5 years after definitive Rx is delivered. In case ofHer2Neu +ve, Trastle/Perth is used every 21 days for 1 year
- Follow up at regular intervals with routine investigations (Biochemical + imagine) + physical examination for recurrent/ residual lump

- first 5 years are crucial for recurrence

Ans 6
1st line CT scan for neoadjuvant/adjuvant intent in case of breast Ca is

1. Anthracycline
   a) Antitumor antibiotic against topoisomerase II
   b) Doxorubicin/Epirubicin
2. Cyclophosphamide (alkylating agent)
3. Taxane (Antimitotic spindle)
   a) Docetaxel/Paclitaxel

These are given as TAC every 21 days for 3-6 cycles
[As duration decreases the toxicity increases]

OR

AC every 21 days for 3-4 cycles, followed by T every 21 days for 3-4 cycles
[as duration decreases, toxicity increases]