

Lung Cancer

114 questions in three levels, with answer key

For NEET-PG, USMLE, DNB and DM revision and for classroom tests. Level 1 covers core facts; Level 2 tests applied reasoning (calculations, imaging and fluid findings, trial interpretation, sequencing); Level 3 covers landmark trials and newer therapies. Answers and explanations are at the end. No drug doses.

Dr. Haritha Chiramana

MD (Internal Medicine), DM (Medical Oncology) · Senior Medical Oncologist & Hemato-Oncologist
C.R. Reddy Cancer Center, C.R. Reddy Superspeciality Hospital · info@drharitha.co.in · drharitha.co.in

9 October 2026 · Free for teaching with attribution (CC BY-NC-ND 4.0) · Online version with instant scoring:
drharitha.co.in/professionals/lung-cancer-mcq

Level 1 · Basics

- Q1. NSCLC** Which paraneoplastic syndrome is most characteristic of squamous cell carcinoma of the lung?
- A Ectopic ACTH (Cushing) syndrome
 - B Anti-Hu sensory neuronopathy
 - C Hypercalcaemia due to PTH-related peptide
 - D Lambert-Eaton myasthenic syndrome
 - E SIADH
- Q2. NSCLC** A 58-year-old smoker has right shoulder and arm pain, wasting of the small muscles of the hand and ptosis with miosis on the right. The most likely diagnosis is:
- A Syringomyelia
 - B Carpal tunnel syndrome
 - C Frozen shoulder
 - D Cervical spondylotic myelopathy
 - E Superior sulcus (Pancoast) tumour
- Q3. NSCLC** A 30-year-old woman who has never smoked has an EGFR-mutant lung adenocarcinoma. Her sister asks whether she should be tested for the EGFR mutation. The correct advice is:
- A Relatives should have BRCA testing
 - B Relatives should have yearly CT from age 25
 - C Relatives should take a preventive EGFR inhibitor
 - D Tumour EGFR mutations are acquired, so relatives do not need EGFR testing
 - E All first-degree relatives need germline EGFR testing
- Q4. NSCLC** Which statement about lung cancer in India is most accurate?
- A A substantial share of patients, especially women, have never smoked
 - B Squamous carcinoma is now the commonest type
 - C Almost all patients are heavy smokers over 70
 - D Biomass smoke has no association with lung cancer
 - E Most cases are diagnosed at stage I
- Q5. NSCLC** A smoker's chest X-ray shows right upper lobe collapse with a convex bulge at the hilum, forming a reversed S-shaped fissure. What does this "Golden S sign" indicate?
- A Pneumothorax
 - B A central hilar mass obstructing the right upper lobe bronchus
 - C Pleural effusion
 - D Normal variant
 - E Middle lobe pneumonia
- Q6. NSCLC** Exposure to which pair shows a multiplicative (synergistic) effect on lung cancer risk?
- A Caffeine and smoking
 - B Asbestos and cigarette smoking
 - C Alcohol and radon
 - D Obesity and asbestos
 - E Mobile phones and smoking
- Q7. NSCLC** Hypertrophic pulmonary osteoarthropathy (clubbing, painful periostitis of long bones) is most associated with:
- A Carcinoid tumour
 - B Small cell lung cancer
 - C Non-small cell lung cancer, particularly adenocarcinoma
 - D Tuberculosis only
 - E Mesothelioma only

- Q8. NSCLC** The histological type of lung cancer most common in never-smokers is:
- A Adenocarcinoma
 - B Carcinoid
 - C Squamous cell carcinoma
 - D Large cell carcinoma
 - E Small cell carcinoma
- Q9. NSCLC** The schematic H&E drawing shows nests of polygonal cells with concentric pink structures. Which immunostain is expected to be positive?
- A Synaptophysin
 - B p40
 - C CD20
 - D Napsin A
 - E TTF-1
- Q10. NSCLC** Which population was shown to benefit from low-dose CT screening in randomised trials (NLST, NELSON)?
- A Older current or former heavy smokers
 - B Adults with asthma
 - C Never-smoking women with biomass exposure
 - D Patients with treated tuberculosis
 - E All adults over 40
- Q11. NSCLC** A 6 mm solid incidental nodule is found on CT in a 45-year-old never-smoker with no risk factors. According to Fleischner 2017, the recommended action is:
- A Immediate PET-CT
 - B CT at 6–12 months, then consider CT at 18–24 months
 - C CT-guided biopsy
 - D Surgical wedge resection
 - E No follow-up at all
- Q12. NSCLC** Brain MRI is recommended routinely in all of the following EXCEPT:
- A Small cell lung cancer of any stage
 - B Stage III NSCLC planned for curative treatment
 - C Any lung cancer patient with headache or focal signs
 - D Asymptomatic stage IA peripheral NSCLC
 - E Stage IV NSCLC
- Q13. NSCLC** Which node station is classically NOT reachable by cervical mediastinoscopy?
- A Station 7 (subcarinal)
 - B Station 4R
 - C Station 2R
 - D Station 5 (aortopulmonary window)
 - E Station 4L
- Q14. NSCLC** Which patients with advanced NSCLC should have broad molecular testing?
- A Only patients under 50
 - B Only patients who fail chemotherapy
 - C All non-squamous NSCLC, and squamous NSCLC in never- or light smokers
 - D Only women who have never smoked
 - E Only adenocarcinomas with brain metastases
- Q15. NSCLC** The most frequent actionable driver in Indian lung adenocarcinoma is:
- A BRAF V600E
 - B ALK fusion
 - C EGFR mutation
 - D KRAS G12C
 - E RET fusion

- Q16. NSCLC** An EGFR exon 20 insertion is found in metastatic NSCLC. Which first-line treatment is supported by a phase 3 trial?
- A Crizotinib
 - B Amivantamab plus carboplatin–pemetrexed
 - C Osimertinib monotherapy
 - D Erlotinib
 - E Gefitinib
- Q17. NSCLC** The schematic H&E drawing shows malignant glands. Before treating this tumour as metastatic disease, which test is essential?
- A Bone marrow biopsy
 - B Bronchial washings for TB only
 - C Serum CEA only
 - D Sputum cytology
 - E Molecular testing for actionable drivers (EGFR, ALK, ROS1 and others) plus PD-L1
- Q18. NSCLC** A fit 60-year-old has a 1.6 cm peripheral solid adenocarcinoma, node-negative on staging. Which operation is supported by JCOG0802 as at least as good as lobectomy for overall survival?
- A Sleeve lobectomy
 - B Anatomical segmentectomy with nodal assessment
 - C Observation
 - D Wedge resection without nodal assessment
 - E Pneumonectomy
- Q19. NSCLC** An 80-year-old with severe COPD has biopsy-proven stage IA NSCLC and is not fit for surgery. The preferred treatment is:
- A Pneumonectomy after pulmonary rehabilitation
 - B Erlotinib
 - C Conventional radiotherapy over 6 weeks with chemotherapy
 - D Observation only
 - E Stereotactic ablative radiotherapy (SBRT)
- Q20. NSCLC** A 48-year-old never-smoker has metastatic adenocarcinoma with EGFR exon 19 deletion. Which first-line drug improved overall survival over gefitinib or erlotinib in FLAURA?
- A Docetaxel
 - B Bevacizumab
 - C Osimertinib
 - D Crizotinib
 - E Pembrolizumab
- Q21. NSCLC** Which first-line treatment is preferred for metastatic ALK-positive NSCLC?
- A Docetaxel
 - B Alectinib or lorlatinib
 - C Crizotinib only after chemotherapy
 - D Pembrolizumab monotherapy
 - E Gefitinib
- Q22. NSCLC** Metastatic non-squamous NSCLC with no driver and PD-L1 TPS 75%, ECOG 1. A standard first-line option is:
- A Best supportive care only
 - B Single-agent docetaxel
 - C Pembrolizumab monotherapy
 - D Gefitinib
 - E Alectinib

- Q23. NSCLC** For squamous metastatic NSCLC without a driver, which chemotherapy partner is NOT appropriate with pembrolizumab?
- A Pemetrexed
 - B Carboplatin–nab–paclitaxel
 - C Cisplatin–gemcitabine
 - D Carboplatin–paclitaxel
 - E Carboplatin–gemcitabine
- Q24. NSCLC** Unresectable stage III NSCLC without a driver responds to concurrent chemoradiation. PACIFIC supports:
- A Erlotinib for 2 years
 - B Prophylactic cranial irradiation
 - C Pneumonectomy
 - D Observation
 - E Durvalumab for 12 months
- Q25. NSCLC** Early palliative care integrated with oncology care in metastatic NSCLC (Temel et al.) led to:
- A More aggressive end-of-life chemotherapy
 - B Shorter survival
 - C Better quality of life and mood, and longer median survival
 - D No change in quality of life
 - E Higher hospital costs without benefit
- Q26. NSCLC** Pemetrexed, used in non-squamous NSCLC, works mainly by:
- A Stabilising microtubules
 - B Cross-linking DNA
 - C Inhibiting topoisomerase I
 - D Inhibiting folate-dependent enzymes such as thymidylate synthase
 - E Blocking EGFR
- Q27. NSCLC** After curative resection of NSCLC, recommended surveillance imaging is:
- A CT chest every 6 months for 2–3 years, then yearly low-dose CT
 - B PET-CT every 3 months for life
 - C Tumour markers every month
 - D Chest X-ray every month
 - E No imaging after 1 year
- Q28. SCLC** Approximately what proportion of patients with small cell lung cancer have extensive-stage disease at diagnosis?
- A About half are stage I
 - B About two thirds
 - C Almost all
 - D About one quarter
 - E About 10%
- Q29. SCLC** Small cell lung cancer arises predominantly in:
- A Patients with asbestosis, in the pleura
 - B Patients with EGFR mutations as the primary driver
 - C Never-smoking young women, in the periphery
 - D Children
 - E Current or former heavy smokers, usually in central airways
- Q30. SCLC** Which microscopic description fits small cell carcinoma of the lung?
- A Small round cells with scant cytoplasm, finely granular chromatin, absent nucleoli and nuclear moulding
 - B Glandular structures with mucin
 - C Spindle cells with storiform pattern
 - D Uniform cells in nests with low mitotic rate
 - E Large cells with prominent nucleoli and keratin pearls

- Q31. SCLC** Which immunohistochemical panel supports neuroendocrine differentiation in small cell carcinoma?
- A Calretinin and WT1
 - B p40 and CK5/6
 - C Synaptophysin, chromogranin, CD56 (and INSM1)
 - D CD20 and CD3
 - E HMB-45 and S100
- Q32. SCLC** Which electrolyte disturbance is the classic paraneoplastic feature of small cell lung cancer?
- A Hypophosphataemia from FGF23
 - B Hypercalcaemia from PTHrP
 - C Hyperkalaemia
 - D Hypermagnesaemia
 - E Hyponatraemia from SIADH
- Q33. SCLC** Lambert-Eaton myasthenic syndrome associated with small cell lung cancer is caused by antibodies against:
- A Muscle-specific kinase
 - B Aquaporin-4
 - C Potassium channels
 - D P/Q-type voltage-gated calcium channels
 - E Acetylcholine receptors
- Q34. SCLC** Ectopic ACTH production by small cell lung cancer typically presents with:
- A Hyperkalaemia
 - B Hypercalcaemia
 - C Weight gain with striae over many years
 - D Hypokalaemic metabolic alkalosis, oedema and hyperglycaemia, often without classic Cushingoid features
 - E Hypoglycaemia
- Q35. SCLC** A bronchoscopic biopsy from a central mass in a heavy smoker shows the appearance in the schematic H&E drawing. The most likely diagnosis is:
- A Hamartoma
 - B Small cell carcinoma
 - C Carcinoid tumour
 - D Adenocarcinoma
 - E Squamous cell carcinoma
- Q36. SCLC** Limited-stage small cell lung cancer is best defined as disease that:
- A Is confined to one hemithorax and regional nodes and can be encompassed in a tolerable radiotherapy field
 - B Has only one distant metastasis
 - C Has no lymph node involvement
 - D Can be removed by pneumonectomy
 - E Is under 3 cm in size
- Q37. SCLC** The main purpose of prophylactic cranial irradiation (PCI) in small cell lung cancer is to:
- A Reduce the incidence of symptomatic brain metastases in patients who responded to initial treatment
 - B Shrink the primary tumour
 - C Treat existing large brain metastases
 - D Prevent bone metastases
 - E Replace chemotherapy
- Q38. SCLC** The standard chemotherapy backbone for small cell lung cancer is:
- A Single-agent paclitaxel
 - B Platinum (cisplatin or carboplatin) plus etoposide
 - C Pemetrexed plus carboplatin
 - D Gemcitabine plus docetaxel
 - E Imatinib

Level 2 · Applied & innovative

- Q39. NSCLC** A 52-year-old bidi smoker has received 3 months of antituberculous treatment for a right upper zone opacity. Sputum was never tested. He has lost more weight and now has haemoptysis. What is the most appropriate next step?
- A Start a course of broad-spectrum antibiotics only
 - B Switch to second-line TB drugs empirically
 - C Repeat chest X-ray after 3 months
 - D Continue antituberculous treatment for 6 more months
 - E Contrast CT chest and tissue diagnosis, with sputum NAAT
- Q40. NSCLC** An EGFR-mutant adenocarcinoma responding to osimertinib for 18 months now progresses rapidly with liver metastases and a rising neuron-specific enolase. What is the most important next step?
- A Double the dose of osimertinib
 - B Biopsy a progressing lesion to look for small-cell transformation
 - C Add pembrolizumab to osimertinib
 - D Switch to gefitinib
 - E Start whole-brain radiotherapy
- Q41. NSCLC** A 64-year-old smoker with 2 months of cough. Based on the schematic chest X-ray shown, what is the most likely diagnosis and next step?
- A Right upper lobe pneumonia: antibiotics and repeat X-ray in 6 weeks only
 - B Right pneumothorax: chest drain
 - C Pleural effusion: thoracentesis
 - D Normal X-ray: reassure
 - E Right upper lobe collapse from a central hilar mass (Golden S sign): contrast CT and bronchoscopy
- Q42. NSCLC** A 58-year-old bidi smoker has right shoulder pain radiating down the inner arm and a right Horner syndrome. The schematic X-ray is shown. Which is the best next imaging test to plan treatment?
- A MRI of the thoracic inlet and brachial plexus, plus CT and PET-CT staging
 - B Cervical spine X-ray only
 - C Shoulder ultrasound
 - D Barium swallow
 - E Repeat chest X-ray in 3 months
- Q43. NSCLC** A patient has a 4 cm right upper lobe mass, an enlarged subcarinal node and a right pleural effusion. Which first diagnostic procedure gives both diagnosis and the highest stage?
- A Wedge resection of the mass
 - B Bronchial washings
 - C Sputum cytology
 - D Pleural fluid cytology with cell block
 - E CT-guided biopsy of the lung mass
- Q44. NSCLC** In an Indian patient with suspected lung cancer, PET-CT shows uptake in mediastinal nodes. Before denying surgery, the clinician should:
- A Repeat PET after 6 weeks of antibiotics
 - B Order tumour markers
 - C Start chemoradiation immediately
 - D Confirm nodal involvement by EBUS-TBNA
 - E Accept the PET result as proof of N2 disease
- Q45. NSCLC** Before right lower lobectomy (5 of 19 segments), a patient has FEV1 and DLCO of 70% predicted, giving predicted post-operative values of about 52%. Following the ACCP approach, the next step is:
- A Proceed to surgery with no further testing
 - B Formal cardiopulmonary exercise testing straight away
 - C Declare inoperable and refer for SBRT
 - D A low-technology exercise test (stair climb or shuttle walk)
 - E Arterial blood gas analysis to decide

Q46. NSCLC A 56-year-old man smoked 15 cigarettes a day from age 18 to 54 and quit 2 years ago. Is he eligible for low-dose CT screening under the USPSTF 2021 criteria?

- A No: he must be over 60
- B No: he must have at least 30 pack-years
- C Only if he has symptoms
- D No: former smokers are excluded
- E Yes: about 27 pack-years, age 50–80, quit within 15 years

Q47. NSCLC CT shows a new 2.2 cm spiculated solid nodule with a pleural tag in the right upper lobe of a 64-year-old smoker; a CT 2 years ago was normal. The next step is:

- A PET-CT and tissue diagnosis with staging, aiming at curative treatment
- B Repeat CT in 12 months
- C Tumour markers
- D Antibiotics and repeat X-ray
- E Reassure because it is under 3 cm

Q48. NSCLC Planned right pneumonectomy: preoperative DLCO is 60% predicted and perfusion scintigraphy shows the right lung receives 55% of total flow. The predicted post-operative DLCO is about:

- A 45%: proceed without further tests
- B 33%: stair climb only
- C Cannot be calculated
- D 60%: low risk
- E 27%: cardiopulmonary exercise testing is needed

Q49. NSCLC A lymphocytic exudative pleural effusion in a 58-year-old smoker has an ADA of 18 U/L; one cytology sample is negative. The best next step is:

- A Talc pleurodesis immediately
- B Discharge with follow-up
- C Repeat cytology with a cell block and, if negative, thorascopic pleural biopsy
- D Start antituberculous treatment
- E Closed (blind) pleural biopsy only

Q50. NSCLC A patient has a right upper lobe mass and a 2 cm hard node in the left supraclavicular fossa. Which first biopsy is best?

- A Bronchoscopic biopsy of the primary
- B CT-guided biopsy of the lung mass
- C Ultrasound-guided biopsy of the supraclavicular node
- D Mediastinoscopy
- E Wait for PET results before any biopsy

Q51. NSCLC An incidental CT (lung window, schematic) in a 62-year-old ex-smoker shows the lesion illustrated, new since a scan 3 years ago. Which feature most raises suspicion of malignancy?

- A Central popcorn calcification
- B Smooth margins with laminated calcification
- C Fat density within the lesion
- D Spiculated margins with a pleural tag
- E Size stable for 2 years

Q52. NSCLC The schematic CT shows a right pleural effusion with nodular pleural thickening in a patient with a known lung mass. How does this finding change stage if proven malignant?

- A It does not affect stage
- B It makes the disease M1a (stage IVA), changing intent from cure to control
- C It is N2 disease
- D It makes the disease M1c2
- E It is T3 disease

Q53. NSCLC Which drug–target pairing is INCORRECT?

- A Lorlatinib – ALK fusion
- B Osimertinib – EGFR exon 19 deletion
- C Capmatinib – MET exon 14 skipping
- D Selpercatinib – ROS1 fusion
- E Sotorasib – KRAS G12C

Q54. NSCLC After 20 months on first-line osimertinib, re-biopsy of progressing disease shows the original EGFR exon 19 deletion plus a new EGFR C797S mutation. What does C797S do?

- A It is a germline variant needing family testing
- B It removes the cysteine to which osimertinib binds covalently, causing resistance
- C It sensitises the tumour to immunotherapy
- D It predicts benefit from rechallenge with osimertinib
- E It indicates small-cell transformation

Q55. NSCLC In concurrent chemoradiation for stage III NSCLC, RTOG 0617 showed that escalating the radiation dose to 74 Gy compared with 60 Gy:

- A Reduced pneumonitis
- B Eliminated the need for chemotherapy
- C Improved overall survival
- D Worsened overall survival
- E Was equivalent with fewer side effects

Q56. NSCLC A patient with EGFR-mutant NSCLC has three asymptomatic brain metastases under 1 cm. A reasonable initial approach is:

- A Start a brain-penetrant EGFR TKI and repeat MRI at 6–8 weeks
- B Neurosurgical resection of all three lesions
- C Steroids alone
- D Immediate whole-brain radiotherapy before any systemic therapy
- E Chemotherapy with pembrolizumab

Q57. NSCLC A 66-year-old with idiopathic pulmonary fibrosis (FVC 72%, DLCO 55%) has a 1.8 cm peripheral adenocarcinoma, cT1b N0. Which statement is most appropriate?

- A Pneumonectomy is preferred to remove all fibrotic lung
- B Lung-sparing (sublobar) surgery is favoured; radiotherapy and immunotherapy carry a higher risk of severe pneumonitis
- C Observation is mandatory because ILD makes cancer treatment futile
- D SBRT is clearly safer than surgery in ILD
- E Perioperative chemo-immunotherapy is standard because ILD patients were well represented in the trials

Q58. NSCLC A patient with metastatic NSCLC and a KRAS G12C mutation has three asymptomatic brain metastases (largest 1.5 cm) without mass effect. The usual first step is:

- A Whole-brain radiotherapy is contraindicated
- B Sotorasib alone with MRI in 6–8 weeks
- C Radiotherapy to the brain metastases, then systemic therapy
- D Observation of the brain lesions until symptoms develop
- E Osimertinib

Q59. NSCLC JCOG0802 tested segmentectomy against lobectomy in a non-inferiority design. What does “non-inferiority” mean here?

- A Non-inferiority trials cannot affect practice
- B The aim was to show segmentectomy is not unacceptably worse than lobectomy within a pre-set margin
- C The trial showed the two operations are identical
- D The aim was to prove segmentectomy is superior
- E Lobectomy was found inferior

- Q60. NSCLC** An Indian patient with EGFR-mutant metastatic NSCLC cannot afford osimertinib. Which regimen improved overall survival over gefitinib alone in a randomised trial from Tata Memorial Centre?
- A Afatinib plus cetuximab
 - B Gefitinib at a double dose
 - C Gefitinib plus bevacizumab
 - D Gefitinib plus pemetrexed-carboplatin
 - E Erlotinib plus pembrolizumab
- Q61. NSCLC** A patient completed adjuvant chemotherapy and atezolizumab for stage IIIA NSCLC (no driver) and relapses with liver metastases 4 months later. How should this relapse be treated?
- A Osimertinib
 - B As second-line disease: docetaxel ± ramucirumab or another non-cross-resistant option
 - C Observation until symptomatic
 - D As first-line disease: repeat platinum doublet with a checkpoint inhibitor
 - E Restart atezolizumab alone
- Q62. NSCLC** In PACIFIC, 5-year overall survival was about 43% with durvalumab and 33% with placebo. Approximately how many patients must be treated for one additional patient to be alive at 5 years?
- A 3
 - B 100
 - C 10
 - D 43
 - E 33
- Q63. NSCLC** A trial reports an overall-survival hazard ratio of 0.77 (95% CI 0.61–0.96). The best interpretation is:
- A 23 patients must be treated to save one life
 - B 23% more patients were alive at 5 years
 - C At any time point, the risk of death was about 23% lower with the experimental treatment
 - D Median survival was 23% longer by definition
 - E The result is not statistically significant
- Q64. NSCLC** A randomised trial of a new drug shows a large progression-free survival benefit, but overall survival is similar; most control patients crossed over to the new drug at progression. The most reasonable reading is:
- A The control arm was inferior from the start
 - B The trial was negative and should be ignored
 - C Progression-free survival is always the more important end point
 - D Crossover may dilute an overall-survival difference; sequencing the drug later may give similar survival
 - E The drug is ineffective
- Q65. NSCLC** A patient with PD-L1 85% NSCLC received one dose of pembrolizumab before NGS returned an EGFR exon 19 deletion. What is the best approach?
- A Stop pembrolizumab and start EGFR-directed therapy, watching closely for pneumonitis
 - B Give radiotherapy only
 - C Switch to nivolumab
 - D Continue pembrolizumab alone
 - E Add osimertinib to pembrolizumab
- Q66. NSCLC** On ipilimumab plus nivolumab, a patient develops fatigue, headache and hyponatraemia; morning cortisol and ACTH are both low, while TSH and free T4 are also low. The most likely diagnosis is:
- A Immune-related hypophysitis
 - B Primary adrenal insufficiency
 - C Hyperthyroidism
 - D Brain metastases
 - E SIADH from the tumour

- Q67. NSCLC** Eight months after chemoradiation and durvalumab, an Indian patient develops a new cavitating lesion in the opposite lung. The best next step is:
- A Restart durvalumab
 - B Start second-line chemotherapy immediately
 - C Assume radiation fibrosis
 - D Start empirical antituberculous treatment without tests
 - E Sputum NAAT and tissue sampling before calling it progression
- Q68. SCLC** Which feature best distinguishes Lambert-Eaton myasthenic syndrome from myasthenia gravis?
- A Thymoma on CT
 - B Response only to thymectomy
 - C Ptosis that worsens through the day
 - D Strength and reflexes improve briefly after sustained exercise, with dry mouth
 - E Positive acetylcholine-receptor antibodies
- Q69. SCLC** A lung tumour contains small cell carcinoma mixed with an adenocarcinoma component. How is it classified and treated?
- A Large-cell neuroendocrine carcinoma
 - B Two separate primaries
 - C Combined small cell carcinoma, treated as small cell lung cancer
 - D Adenocarcinoma, treated with EGFR testing only
 - E Carcinoid tumour
- Q70. SCLC** Which patient with small cell lung cancer needs invasive mediastinal staging before treatment?
- A A patient with a malignant pleural effusion
 - B A patient with liver metastases
 - C A patient with a 2.5 cm peripheral tumour and no nodal disease on PET-CT, being considered for surgery
 - D A patient with bulky mediastinal nodes on CT
 - E A patient with brain metastases
- Q71. SCLC** An EGFR exon 19-deleted adenocarcinoma transforms into small cell carcinoma on osimertinib. Re-biopsy will most likely show:
- A Small cell histology that retains the original EGFR mutation, often with TP53 and RB1 loss
 - B A germline EGFR mutation
 - C Loss of the EGFR mutation and a new KRAS mutation
 - D Squamous transformation with PD-L1 100%
 - E An ALK fusion
- Q72. SCLC** A patient with limited-stage small cell lung cancer presents with superior vena cava obstruction. The standard treatment is:
- A Stenting and best supportive care
 - B Steroids alone
 - C Surgery first
 - D Palliative radiotherapy alone
 - E Concurrent chemotherapy with definitive thoracic radiotherapy, with curative intent
- Q73. SCLC** A patient with SIADH from small cell lung cancer has sodium 118 mmol/L and mild confusion. Which statement is correct?
- A SIADH is unrelated to the tumour
 - B Give large volumes of normal saline
 - C Correct sodium slowly and start chemotherapy promptly, which treats the SIADH
 - D Delay chemotherapy until sodium is normal for a month
 - E Correct sodium to normal within 6 hours

Q74. (SCLC) A woman with extensive-stage small cell lung cancer has three small asymptomatic brain metastases. The usual approach is:

- A Whole-brain radiotherapy before any systemic therapy
- B Start chemo-immunotherapy, then treat remaining brain lesions with radiosurgery or whole-brain radiotherapy after induction
- C Observation only
- D Thoracic radiotherapy first
- E Neurosurgery for all three lesions

Q75. (SCLC) A 70-year-old with newly diagnosed extensive-stage small cell lung cancer is bed-bound (ECOG 3) because of liver metastases and breathlessness; before the illness he was fully active. What is the best plan?

- A Best supportive care only, because of ECOG 3
- B Wait until performance status improves
- C Radiotherapy to the liver
- D Offer chemotherapy promptly, with careful supportive care, because responses are often rapid
- E Immunotherapy alone

Q76. (SCLC) After four cycles of chemo-immunotherapy for extensive-stage disease, a patient has a good response at distant sites but a residual 3 cm hilar mass. A reasonable addition is:

- A Consolidative thoracic radiotherapy
- B Stopping maintenance immunotherapy
- C Pneumonectomy
- D Whole-brain radiotherapy
- E Switching to tarlatamab

Q77. (SCLC) During the first tarlatamab infusion, a patient develops fever 39 °C and hypotension responding to fluids. The most likely cause is:

- A Sepsis from neutropenia
- B Tumour lysis syndrome
- C Adrenal crisis from immunotherapy
- D Anaphylaxis to etoposide
- E Cytokine release syndrome

Level 3 · Challenging

Q78. (NSCLC) A 14 mm part-solid nodule has persisted for 4 months with a 7 mm solid component. The best interpretation is:

- A Benign because it has not grown
- B A pure ground-glass nodule needing no follow-up
- C Almost certainly infection; repeat in 2 years
- D A hamartoma
- E Highly suspicious for adenocarcinoma; plan tissue diagnosis or resection

Q79. (NSCLC) Under the IASLC 9th edition TNM, a 2.5 cm tumour with metastasis to a single ipsilateral mediastinal node station and no distant spread is staged as:

- A T1c N2 MO, stage IIIA
- B T2a N2b MO, stage IIIB
- C T1c N2a MO, stage IIIA
- D T1c N2a MO, stage IIB
- E T1c N1 MO, stage IIB

Q80. (NSCLC) Which finding makes a lung cancer M1c2 under the 9th edition?

- A A single brain metastasis
- B Multiple metastases confined to the liver
- C Metastases in more than one extrathoracic organ system
- D A malignant pleural effusion
- E A separate nodule in the contralateral lung

Q81. NSCLC A 55-year-old never-smoker has the 18 mm lesion shown on CT (schematic), persistent after 3 months, with a 7 mm solid component. What is the most likely pathology?

- A Squamous carcinoma
- B Small cell carcinoma
- C Hamartoma
- D Adenocarcinoma (minimally invasive or invasive) arising from a ground-glass precursor
- E Healed tuberculous granuloma

Q82. NSCLC A plasma ctDNA NGS test in a never-smoker with metastatic adenocarcinoma shows no driver. The correct interpretation is:

- A The tumour is squamous
- B PD-L1 testing is now unnecessary
- C A driver is not excluded; test tissue as well
- D Repeat plasma testing monthly
- E No driver is present; start chemo-immunotherapy at once

Q83. NSCLC Single-gene EGFR PCR is negative in a never-smoker with metastatic adenocarcinoma. ALK IHC is negative. What should be done?

- A NGS with RNA for fusions (ROS1, RET, NTRK) and other drivers
- B Repeat EGFR PCR on the same block
- C Conclude that there is no driver
- D Start EGFR TKI empirically
- E Start pembrolizumab monotherapy regardless of PD-L1

Q84. NSCLC At progression on lorlatinib after alectinib, which test result would best guide the next step?

- A Re-biopsy or ctDNA for ALK resistance mutations and bypass pathways
- B Repeat ALK IHC on the diagnostic sample
- C PD-L1 on the original biopsy
- D Germline ALK testing
- E Serum CEA

Q85. NSCLC For first-line treatment of ROS1-positive metastatic NSCLC with brain metastases, which choice best reflects current evidence?

- A Crizotinib, because of superior brain penetration
- B Taletrectinib or repotrectinib
- C Osimertinib
- D Selpercatinib
- E Pembrolizumab monotherapy

Q86. NSCLC A patient with metastatic NSCLC and an activating HER2 (ERBB2) mutation progresses after chemo-immunotherapy. Which option has phase 2 evidence as an oral targeted therapy?

- A Lapatinib
- B Erlotinib
- C Zongertinib
- D Trastuzumab alone
- E Imatinib

Q87. NSCLC After complete (RO) resection of pN2 NSCLC and adjuvant chemotherapy, the Lung ART trial showed that postoperative radiotherapy:

- A Doubled overall survival
- B Improved disease-free survival only in squamous cancers
- C Reduced brain metastases
- D Was required for all pN2 patients
- E Did not improve disease-free survival and increased cardiopulmonary deaths

- Q88. NSCLC** On cardiopulmonary exercise testing before lobectomy, a patient's VO₂ max is 9 mL/kg/min. The best interpretation is:
- A Repeat spirometry only
 - B High risk: consider sublobar resection, SBRT or other non-surgical options
 - C VO₂ max is irrelevant to lung resection
 - D Low risk: proceed with lobectomy
 - E Moderate risk: proceed with pneumonectomy
- Q89. NSCLC** In FLAURA2, adding platinum–pemetrexed to first-line osimertinib in EGFR-mutant NSCLC:
- A Worsened overall survival
 - B Was only tested in exon 20 insertions
 - C Reduced haematological toxicity
 - D Had no effect on progression-free survival
 - E Improved progression-free and, at final analysis, overall survival, with more toxicity
- Q90. NSCLC** In KEYNOTE-O42 (pembrolizumab vs chemotherapy for PD-L1 ≥1%), the overall survival benefit was:
- A Largest in PD-L1 1–49%
 - B Limited to squamous tumours
 - C Seen only in EGFR-positive patients
 - D Absent in all subgroups
 - E Driven mainly by patients with PD-L1 ≥50%
- Q91. NSCLC** After resection of stage II EGFR exon 19-deleted NSCLC and adjuvant chemotherapy, ADAURA showed that osimertinib for 3 years:
- A Had no effect
 - B Was inferior to adjuvant pembrolizumab
 - C Was only beneficial for stage IA
 - D Improved disease-free and overall survival
 - E Improved disease-free survival but worsened overall survival
- Q92. NSCLC** A resectable stage IIIA (single-station N2) adenocarcinoma has no EGFR/ALK alteration. Which approach is supported by phase 3 trials such as KEYNOTE-671 and CheckMate 77T?
- A Neoadjuvant radiotherapy alone
 - B Neoadjuvant chemo-immunotherapy, surgery, then adjuvant immunotherapy
 - C Observation until symptoms
 - D Osimertinib before surgery
 - E Surgery alone
- Q93. NSCLC** Why should durvalumab not be given after chemoradiation for EGFR-mutant stage III NSCLC?
- A It is contraindicated in all women
 - B Durvalumab is not approved for stage III disease
 - C EGFR mutations predict durvalumab-induced haemorrhage
 - D It causes hypercalcaemia
 - E Little benefit, and osimertinib after immunotherapy raises pneumonitis risk; LAURA supports osimertinib instead
- Q94. NSCLC** Which statement about KRAS G12C-mutant metastatic NSCLC is correct?
- A KRAS G12C predicts benefit from osimertinib
 - B KRAS mutations are inherited
 - C KRAS G12C tumours do not respond to immunotherapy
 - D Sotorasib doubled overall survival in CodeBreak 200
 - E Chemo-immunotherapy is used first; sotorasib improved progression-free but not overall survival versus docetaxel
- Q95. NSCLC** A completely resected stage IIA (pT2b N1) RET fusion-positive adenocarcinoma has received adjuvant chemotherapy. Which next step has randomised evidence?
- A Adjuvant osimertinib
 - B Adjuvant bevacizumab
 - C Adjuvant alectinib
 - D Adjuvant selpercatinib
 - E No further therapy is ever indicated

Q96. NSCLC Resectable stage II EGFR exon 19-deleted NSCLC in a patient whose surgeon wants downstaging before lobectomy. Which induction option is supported by a phase 3 trial?

- A Radiotherapy alone
- B Nivolumab plus chemotherapy (CheckMate 816)
- C Alectinib
- D Durvalumab alone
- E Osimertinib with or without chemotherapy (NeoADAURA)

Q97. NSCLC In PD-L1-negative (TPS <1%) metastatic NSCLC without a driver, which strategy is thought to add most beyond a single PD-1 inhibitor with chemotherapy?

- A Bevacizumab alone
- B Adding CTLA-4 blockade (nivolumab + ipilimumab, or durvalumab + tremelimumab) with chemotherapy
- C Pembrolizumab monotherapy
- D Observation
- E Osimertinib

Q98. NSCLC The risk of a second primary lung cancer after resection of NSCLC is approximately:

- A 1–2% per year, persisting long term
- B Zero after 5 years
- C 20% per year
- D 0.01% per year
- E Only in the first year

Q99. SCLC Which molecular finding is almost universal in small cell lung cancer?

- A ALK fusion
- B Inactivation of both TP53 and RB1
- C KRAS G12C mutation
- D BRAF V600E
- E EGFR exon 19 deletion

Q100. SCLC Which statement about DLL3 in small cell lung cancer is correct?

- A It is an inhibitory Notch ligand expressed on most small cell cancers and is the target of tarlatamab
- B It predicts response to EGFR inhibitors
- C It is a germline cancer-predisposition gene
- D It is a driver mutation requiring NGS before treatment
- E It is expressed mainly on normal lung epithelium

Q101. SCLC In limited-stage small cell lung cancer, CONVERT compared twice-daily 45 Gy over 3 weeks with once-daily 66 Gy over 6.5 weeks and found:

- A Once-daily was clearly superior
- B Neither improved on chemotherapy alone
- C No significant difference in survival; both are acceptable
- D Once-daily caused more oesophagitis
- E Twice-daily was clearly superior

Q102. SCLC In extensive-stage small cell lung cancer, the Japanese randomised trial of PCI versus MRI surveillance (Takahashi) found:

- A PCI eliminated all brain metastases
- B A large survival benefit from PCI
- C No overall-survival benefit from PCI when patients had regular brain MRI
- D PCI improved cognition
- E MRI surveillance worsened survival

Q103. SCLC The landmark Turrisi (INT 0096) trial in limited-stage small cell lung cancer showed that twice-daily thoracic radiotherapy (45 Gy in 3 weeks) compared with once-daily 45 Gy over 5 weeks:

- A Improved 5-year survival, with more oesophagitis
- B Worsened survival
- C Allowed omission of chemotherapy
- D Had no effect on survival but reduced oesophagitis
- E Replaced the need for PCI

Q104. (SCLC) In limited-stage small cell lung cancer without progression after chemoradiation, ADRIATIC showed that durvalumab:

- A Had no effect
- B Was harmful when given after PCI
- C Improved overall survival (median about 56 vs 33 months)
- D Should replace thoracic radiotherapy
- E Only improved response rate

Q105. (SCLC) Small cell lung cancer relapses 6 weeks after completing platinum–etoposide with atezolizumab. A preferred option supported by a phase 3 trial is:

- A Platinum–etoposide rechallenge
- B Tarlatamab
- C Osimertinib
- D Pemetrexed
- E Observation

Q106. (SCLC) A 62-year-old has a resected 2.4 cm small cell carcinoma, pT1c NO after negative invasive mediastinal staging. What is recommended next?

- A Adjuvant platinum–etoposide chemotherapy, with PCI or MRI surveillance
- B Durvalumab alone
- C Observation only
- D Thoracic radiotherapy alone
- E Osimertinib

Q107. (SCLC) In extensive-stage disease, adding lurbinectedin to atezolizumab maintenance after induction (IMforte) is best suited to:

- A Patients with symptomatic brain metastases
- B Limited-stage disease after chemoradiation
- C Patients with ECOG 3
- D Patients who progressed during induction
- E Fit patients without brain metastases who responded to chemo–atezolizumab induction

Q108. (SCLC) In IMpower133 and CASPIAN, adding a PD–L1 antibody to platinum–etoposide in extensive-stage small cell lung cancer improved median overall survival by about:

- A 12 months
- B No difference
- C 2–3 months, with a small group of long-term survivors
- D 1 week
- E 6 months but only in PD–L1-high tumours

Level 2 · Applied & innovative

Q109. (NSCLC) A patient with ALK-positive NSCLC on lorlatinib has a serum cholesterol of 340 mg/dL and triglycerides of 480 mg/dL at 2 months. What is the best approach?

- A Start immunotherapy instead
- B Ignore: lipids do not matter in cancer
- C Start lipid-lowering therapy and continue lorlatinib with monitoring
- D Stop lorlatinib permanently
- E Switch to crizotinib immediately

Q110. (NSCLC) On day 3 of brigatinib, a patient develops new breathlessness and hypoxia with bilateral ground-glass change. The most likely cause is:

- A Pulmonary embolism is the only possibility
- B Radiation pneumonitis
- C Early-onset pulmonary events typical of brigatinib
- D ALK-positive disease progression
- E Expected TKI response

Q111. NSCLC A patient on dabrafenib plus trametinib for BRAF V600E NSCLC develops fever of 39 °C without a source. What is the correct first step?

- A Hold the BRAF/MEK treatment, give antipyretics and restart when the fever settles
- B Continue treatment and start broad antibiotics only
- C Switch to osimertinib
- D Stop treatment permanently
- E Add high-dose steroids and continue

Level 3 · Challenging

Q112. NSCLC A patient on capmatinib for MET exon 14 NSCLC has a rise in creatinine from 0.9 to 1.3 mg/dL with normal cystatin C and no symptoms. The best interpretation is:

- A Acute tubular necrosis needing dialysis
- B Inhibition of renal creatinine transporters, not true loss of kidney function
- C Dehydration from diarrhoea is certain
- D Tumour lysis syndrome
- E Immune nephritis

Q113. NSCLC Six weeks after starting pembrolizumab, a 66-year-old has chest pain, ptosis, proximal weakness, troponin elevation and CK 4200 U/L. What is the most urgent action?

- A Start thyroxine
- B Stop immunotherapy permanently and start high-dose IV steroids with cardiology input for immune myocarditis-myositis
- C Order a bone scan
- D Give oral steroids and continue immunotherapy
- E Continue pembrolizumab and repeat troponin in a week

Q114. NSCLC A patient with ALK-positive NSCLC on lorlatinib is diagnosed with pulmonary TB. Which treatment issue is most important?

- A Stop lorlatinib permanently
- B Rifampicin markedly lowers TKI levels and with lorlatinib can cause severe hepatotoxicity: plan a rifabutin-based or non-rifamycin regimen with the TB team
- C Isoniazid alone for 2 months is adequate
- D Double the lorlatinib dose
- E No interaction exists between TB drugs and TKIs

Answer key

1·C 2·E 3·D 4·A 5·B 6·B 7·C 8·A 9·B 10·A 11·B 12·D 13·D 14·C 15·C 16·B 17·E 18·B 19·E 20·C 21·B
22·C 23·A 24·E 25·C 26·D 27·A 28·B 29·E 30·A 31·C 32·E 33·D 34·D 35·B 36·A 37·A 38·B 39·E 40·B
41·E 42·A 43·D 44·D 45·D 46·E 47·A 48·E 49·C 50·C 51·D 52·B 53·D 54·B 55·D 56·A 57·B 58·C
59·B 60·D 61·B 62·C 63·C 64·D 65·A 66·A 67·E 68·D 69·C 70·C 71·A 72·E 73·C 74·B 75·D 76·A 77·E
78·E 79·D 80·C 81·D 82·C 83·A 84·A 85·B 86·C 87·E 88·B 89·E 90·E 91·D 92·B 93·E 94·E 95·D 96·E
97·B 98·A 99·B 100·A 101·C 102·C 103·A 104·C 105·B 106·A 107·E 108·C 109·C 110·C 111·A 112·B 113·B
114·B

Explanations

- Q1 · C** Squamous carcinoma classically secretes PTHrP, causing hypercalcaemia. SIADH, ectopic ACTH, Lambert–Eaton and anti-Hu syndromes are typical of small cell carcinoma.
- Q2 · E** Shoulder/arm pain, C8–T1 weakness and Horner syndrome in a smoker point to an apical (Pancoast) tumour invading the brachial plexus and sympathetic chain. It is often mislabelled as frozen shoulder or spondylosis.
- Q3 · D** Common EGFR mutations in tumours are somatic. Families can be reassured; germline testing is reserved for rare patterns such as germline T790M or a variant suggesting a hereditary syndrome on NGS.
- Q4 · A** Indian patients are younger than in Western series, adenocarcinoma is now commonest, most present at stage III–IV, and a substantial share are never-smokers, with biomass and second-hand smoke as contributors.
- Q5 · B** The concave collapsed lobe plus the convex central mass make a reversed S. In an adult smoker it strongly suggests a central bronchial carcinoma: CT and bronchoscopy follow.
- Q6 · B** Asbestos and smoking each raise risk, but together the risk is far greater than the sum. Radon also interacts with smoking.
- Q7 · C** Hypertrophic osteoarthropathy is a classic paraneoplastic feature of NSCLC; it may improve after tumour resection.
- Q8 · A** Adenocarcinoma predominates in never-smokers, who also have more EGFR, ALK and other targetable drivers.
- Q9 · B** Keratin pearls and intercellular bridges mean squamous cell carcinoma, which stains with p40 (and CK5/6). TTF-1 and napsin A mark adenocarcinoma; synaptophysin marks neuroendocrine tumours.
- Q10 · A** NLST and NELSON enrolled heavy smokers (USPSTF now: age 50–80, ≥20 pack-years, quit within 15 years) and showed fewer lung cancer deaths. Screening never-smokers is not recommended outside research.
- Q11 · B** Solid nodules of 6–8 mm in low-risk patients get CT at 6–12 months, then consider 18–24 months. Nodules under 6 mm in low-risk patients need no routine follow-up; over 8 mm: CT at 3 months, PET-CT or biopsy.
- Q12 · D** Brain MRI is advised for stage II–IV NSCLC, all small cell, and any neurological symptom; it is optional in stage IB and not needed for asymptomatic stage IA.
- Q13 · D** Cervical mediastinoscopy reaches stations 2, 4 and 7. Stations 5 and 6 need an anterior mediastinotomy or VATS; EUS reaches 8 and 9.
- Q14 · C** Testing every advanced non-squamous NSCLC (and squamous in never/light smokers, young patients or mixed histology) avoids missing drivers in smokers, men and older patients.
- Q15 · C** EGFR mutations occur in roughly a quarter to a third of Indian adenocarcinomas; ALK fusions in about 5%; KRAS mutations are less frequent than in Western series.
- Q16 · B** Exon 20 insertions are insensitive to earlier EGFR TKIs. PAPILLON showed amivantamab plus platinum–pemetrexed improved progression-free survival over chemotherapy.
- Q17 · E** Gland-forming tumour = adenocarcinoma, the subtype with the most targetable drivers. Driver testing and PD-L1 determine first-line therapy.
- Q18 · B** JCOG0802 found segmentectomy non-inferior (in fact better) for overall survival in peripheral tumours ≤2 cm, at the cost of more local recurrence. Nodal assessment remains essential.

- Q19 · E** SBRT achieves local control around 90% in a few sessions and is the standard for medically inoperable stage I NSCLC.
- Q20 · C** FLAURA showed osimertinib improved both progression-free and overall survival compared with first-generation EGFR TKIs, with good brain activity.
- Q21 · B** Next-generation ALK inhibitors (alectinib, lorlatinib, brigatinib) beat crizotinib and control brain disease well. Immunotherapy is of little benefit in ALK-positive disease.
- Q22 · C** For PD-L1 $\geq 50\%$ without a driver, immunotherapy alone (pembrolizumab, atezolizumab, cemiplimab) is standard; chemo-immunotherapy is an alternative for bulky or rapid disease. KEYNOTE-024 showed a long-term survival advantage over chemotherapy.
- Q23 · A** Pemetrexed is inactive in squamous histology and is used only for non-squamous NSCLC; KEYNOTE-407 used carboplatin with paclitaxel or nab-paclitaxel.
- Q24 · E** PACIFIC showed consolidation durvalumab after chemoradiation improved progression-free and overall survival (5-year survival about 43% vs 33%).
- Q25 · C** Early palliative care improved quality of life and depression and, despite less aggressive end-of-life care, was associated with longer survival.
- Q26 · D** Pemetrexed is a multitargeted antifolate (thymidylate synthase, DHFR, GARFT). Folic acid and vitamin B12 are given to reduce toxicity. It is inactive in squamous histology.
- Q27 · A** NCCN and ESMO advise CT every 6 months for 2–3 years then yearly low-dose CT, mainly to detect relapse early and second primary lung cancers. Routine PET and markers are not recommended.
- Q28 · B** Around 60–70% present with extensive-stage disease because of the rapid doubling time and early dissemination.
- Q29 · E** Almost all patients have a heavy smoking history; tumours are typically central with bulky nodes.
- Q30 · A** Small cell carcinoma shows “salt and pepper” chromatin, inconspicuous nucleoli, moulding, crush artefact and very high mitotic activity. Keratin pearls suggest squamous carcinoma; glands, adenocarcinoma; low-grade nests, carcinoid.
- Q31 · C** Neuroendocrine markers support the diagnosis (which is mainly morphological). p40/CK5/6 indicate squamous carcinoma; calretinin/WT1 mesothelioma; CD markers lymphoma; HMB-45 melanoma.
- Q32 · E** About one in ten small cell cancers cause SIADH. PTHrP-mediated hypercalcaemia is typical of squamous carcinoma.
- Q33 · D** Antibodies reduce presynaptic acetylcholine release; weakness improves briefly with repeated effort, unlike myasthenia gravis.
- Q34 · D** Cortisol rises so rapidly that the classic habitus has no time to develop; hypokalaemia and alkalosis dominate. It worsens prognosis and infection risk.
- Q35 · B** Sheets of small round blue cells with scant cytoplasm, nuclear moulding and crush (smeared) artefact are classic small cell carcinoma; neuroendocrine markers and a very high Ki-67 support it.
- Q36 · A** The working definition is about radiotherapy feasibility. Extensive stage means disease beyond that field, including malignant effusion or distant metastases.
- Q37 · A** PCI targets microscopic brain disease after a good response. In limited stage it reduced brain metastases and improved survival in older studies; MRI surveillance is an alternative, especially in extensive stage.
- Q38 · B** Platinum-etoposide has been the backbone for decades; checkpoint inhibitors are added in extensive stage and durvalumab follows chemoradiation in limited stage.
- Q39 · E** TB must be proven microbiologically. Unproven TB that is not improving needs CT and tissue (bronchoscopy, EBUS or CT-guided biopsy); the same sample can be tested for TB. Empirical drug-resistant regimens without proof are inappropriate.
- Q40 · B** Rapid visceral progression with rising neuroendocrine markers suggests transformation to small cell carcinoma (a few percent of resistance), which needs platinum-etoposide. Immunotherapy added to an EGFR TKI raises pneumonitis risk and is ineffective.

- Q41 · E** The collapsed right upper lobe pulls the horizontal fissure up (concave laterally) while a central mass makes it bulge medially, giving a reversed S. A central bronchial carcinoma must be excluded with CT and bronchoscopy.
- Q42 · A** An apical mass with rib destruction, arm pain and Horner syndrome is a superior sulcus (Pancoast) tumour. MRI defines plexus, vertebral and vascular invasion; induction chemoradiation then surgery is the usual curative route when resectable.
- Q43 · D** A malignant effusion is M1a; proving it diagnoses and stages in one step and may provide a cell block for molecular testing. If negative twice, thoracoscopy follows. Biopsying the primary alone may leave the stage unresolved.
- Q44 · D** Granulomatous disease (TB, fungal) causes false-positive nodal uptake. Tissue confirmation (EBUS ± EUS, mediastinoscopy) is required before a patient is called unresectable.
- Q45 · D** Predicted post-operative value = measured × (1 – segments removed ÷ functioning segments). Both ≥60%: low risk. Either 30–60% (both ≥30%): stair climb (≥22 m) or shuttle walk (≥400 m); failure leads to cardiopulmonary exercise testing. Below 30%: exercise testing directly. Blood gases do not decide resectability.
- Q46 · E** Pack-years = packs per day × years: $0.75 \times 36 \approx 27$. USPSTF 2021: age 50–80, ≥20 pack-years, current smoker or quit within 15 years. Screening stops after 15 years of abstinence.
- Q47 · A** A new, spiculated solid nodule over 8 mm in a smoker is highly suspicious. Fleischner guidance for nodules >8 mm is PET-CT or tissue sampling; this one needs full staging toward resection or SBRT.
- Q48 · E** ppo DLCO = $60 \times (1 - 0.55) = 27\%$. Under 30% (ACCP) needs formal cardiopulmonary exercise testing; VO2 max below 10 mL/kg/min would favour non-surgical options.
- Q49 · C** A low ADA makes TB less likely. Cytology yield rises with repeated sampling; thoracoscopy is the most sensitive test (80–99%). Blind closed biopsy has limited value for cancer.
- Q50 · C** Sample the site that proves the highest stage with the least risk: a positive supraclavicular node is N3 and confirms the diagnosis and stage in one step.
- Q51 · D** Spiculation, pleural tagging, upper-lobe location, growth and smoking history all favour cancer. Popcorn calcification and fat suggest hamartoma; central or laminated calcification and 2-year stability suggest benignity.
- Q52 · B** Malignant pleural effusion or pleural nodules are M1a. Prove it (cytology, thoracoscopy) because a non-malignant effusion would leave curative options open.
- Q53 · D** Selpercatinib targets RET fusions. ROS1 is treated with taletrectinib, repotrectinib, entrectinib or crizotinib.
- Q54 · B** Osimertinib binds irreversibly to cysteine 797; the C797S substitution prevents this. Next options are chemotherapy-based (± amivantamab) or trials.
- Q55 · D** High-dose radiotherapy was harmful (worse survival, likely from cardiac and lung toxicity). About 60 Gy in 30 fractions remains standard.
- Q56 · A** Osimertinib (and ALK inhibitors for ALK-positive disease) has high intracranial activity. Small asymptomatic lesions can be watched closely on the TKI, reserving radiosurgery for non-response or symptoms.
- Q57 · B** ILD raises both lung cancer risk and treatment toxicity (acute exacerbation after surgery, radiation and immune pneumonitis). For stage I–II disease with adequate function, surgery with lung-sparing resection is favoured; SBRT has not been shown to be safer, and ILD patients were excluded from perioperative immunotherapy trials.
- Q58 · C** Brain-penetrant TKIs allow systemic therapy first for EGFR, ALK, RET and suitable ROS1 tumours. For MET exon 14, KRAS G12C and BRAF-driven disease, radiotherapy (usually radiosurgery for a few lesions) followed by systemic therapy is generally preferred.
- Q59 · B** Non-inferiority trials test whether a less invasive option keeps outcomes within a predefined margin. JCOG0802 met this and even showed better overall survival with segmentectomy, though local recurrence was higher.
- Q60 · D** Noronha et al. (J Clin Oncol 2020) showed gefitinib with pemetrexed–carboplatin improved progression-free and overall survival over gefitinib alone, offering an affordable option.
- Q61 · B** Relapse within about 6 months of adjuvant therapy suggests resistance and is managed as second-line disease. Relapse after more than 12 months is generally treated as first-line metastatic disease; 6–12 months is individualised.
- Q62 · C** Absolute difference $43 - 33 = 10$ percentage points; number needed to treat = $1/0.10 = 10$. Reading results in absolute terms helps weigh cost and toxicity.

- Q63 · C** A hazard ratio describes relative risk of the event over time. It is not an absolute difference, and does not translate directly into a median gain. A confidence interval excluding 1 indicates significance.
- Q64 · D** When control patients receive the drug at progression, overall survival compares early versus later use. The decision then weighs time without progression, toxicity, quality of life and cost.
- Q65 · A** EGFR-mutant tumours gain little from immunotherapy, and osimertinib after recent PD-1 blockade raises the risk of severe pneumonitis. Never combine them; monitor carefully when switching.
- Q66 · A** Low cortisol with low ACTH (and central hypothyroidism) points to pituitary failure, typical of CTLA-4 blockade. Replace glucocorticoid before thyroid hormone.
- Q67 · E** TB reactivation can occur on immunotherapy or steroids, and cavities can be infective, metastatic or a new primary. Microbiology and tissue prevent wrong treatment.
- Q68 · D** LEMS causes proximal weakness, reduced reflexes that increase after effort (post-tetanic facilitation) and autonomic features. Ocular and bulbar onset with fatigability suggests myasthenia gravis.
- Q69 · C** The WHO classifies these as combined small cell carcinoma (naming the other component). Treatment follows small cell principles.
- Q70 · C** Only apparent T1-2 NO disease is considered for surgery, so pathological nodal confirmation is essential. Obvious nodal or distant disease needs no further invasive staging.
- Q71 · A** Transformed tumours keep the founding EGFR mutation; TP53 and RB1 loss increase the risk. Treatment switches to platinum-etoposide.
- Q72 · E** SVCO does not change the curative intent in limited stage. Chemotherapy works quickly; stenting is reserved for severe symptoms.
- Q73 · C** Over-rapid correction risks osmotic demyelination (limit about 8–10 mmol/L in 24 hours). Fluid restriction, hypertonic saline for symptoms and prompt chemotherapy (which removes the source) are key.
- Q74 · B** Asymptomatic brain metastases can be treated systemically first, with radiotherapy after induction. Symptomatic brain metastases are usually irradiated first.
- Q75 · D** Poor performance status caused by the cancer itself often improves rapidly with chemotherapy. Comorbidity-driven poor status is different.
- Q76 · A** Consolidative thoracic radiotherapy for residual chest disease after a good response reduced chest relapse in the CREST trial; data with chemo-immunotherapy are limited but it is commonly used.
- Q77 · E** Tarlatamab, a DLL3 × CD3 T-cell engager, commonly causes cytokine release syndrome (mostly grade 1–2) during early doses; neurotoxicity (ICANS) is also monitored. Tocilizumab and steroids treat severe cases.
- Q78 · E** A persistent part-solid nodule with a solid component of 6 mm or more is highly suspicious (often invasive adenocarcinoma) even without growth, and should be managed with tissue or resection after multidisciplinary review.
- Q79 · D** The 9th edition splits N2 into N2a (one station) and N2b (multiple). T1 N2a is stage IIB; T1 N2b is IIIA; T2 N2a is IIIA; T2 N2b is IIIB.
- Q80 · C** M1c is now split: M1c1 = multiple metastases in one organ system; M1c2 = metastases in several organ systems. A single extrathoracic metastasis is M1b; pleural effusion and contralateral nodules are M1a.
- Q81 · D** A persistent part-solid nodule is typically adenocarcinoma-spectrum: the ground-glass part reflects lepidic growth and the solid part often invasion. A solid component ≥6 mm is highly suspicious and needs surgical or tissue management.
- Q82 · C** Plasma tests have high specificity but limited sensitivity (low shedding, especially with limited disease or brain-only spread). A negative result needs tissue confirmation; a positive result can be acted on.
- Q83 · A** PCR and IHC miss ROS1, RET, NTRK fusions, MET exon 14, BRAF, HER2 and uncommon EGFR variants. Never-smokers have a high chance of another driver; RNA-based NGS is the best way to find fusions.
- Q84 · A** Resistance mechanisms (compound ALK mutations, MET amplification, histological change) guide subsequent therapy. Tumour markers and old samples do not reflect current biology.
- Q85 · B** Next-generation ROS1 inhibitors (taletrectinib, repotrectinib) give high response rates, long progression-free survival and good brain activity; crizotinib penetrates the brain poorly.

- Q86 · C** Zongertinib, a HER2-selective TKI, showed high response rates in previously treated HER2-mutant NSCLC (Beamion LUNG-1). Trastuzumab deruxtecan is another option (watch for ILD).
- Q87 · E** Lung ART showed no significant disease-free survival benefit and more cardiopulmonary toxicity, so PORT is not routine after RO resection; it is used for positive margins.
- Q88 · B** VO2 max >20 mL/kg/min is low risk, 10–20 individualised, <10 high risk (mortality >10% after anatomical resection).
- Q89 · E** FLAURA2 improved progression-free survival and the final analysis showed longer overall survival (median about 47.5 vs 37.6 months), at the cost of more haematological toxicity and clinic visits.
- Q90 · E** Exploratory analysis showed little benefit in the 1–49% group; the overall result reflected the ≥50% subgroup. Immunotherapy alone at 1–49% is reserved for those who cannot have chemotherapy.
- Q91 · D** ADAURA showed a large disease-free survival benefit and a 5-year overall survival of 88% vs 78%, making EGFR testing of resected NSCLC mandatory.
- Q92 · B** Perioperative chemo-immunotherapy raised pathological complete response rates and event-free survival, and KEYNOTE-671 showed improved overall survival.
- Q93 · E** Subgroup data show little benefit of PD-(L)1 blockade in EGFR-mutant disease and a higher risk of severe pneumonitis when osimertinib follows. LAURA showed osimertinib after chemoradiation markedly prolonged progression-free survival.
- Q94 · E** KRAS G12C tumours (often in smokers) are treated with chemo-immunotherapy first. CodeBreak 200 showed a modest progression-free survival gain over docetaxel without an overall survival difference.
- Q95 · D** LIBRETTO-432 showed adjuvant selpercatinib markedly improved event-free survival in resected stage IB–IIIA RET-positive NSCLC (small trial, short follow-up).
- Q96 · E** NeoADAURA showed improved major pathological response with neoadjuvant osimertinib ± chemotherapy. Immunotherapy trials largely excluded or showed little benefit in EGFR-mutant disease.
- Q97 · B** Exploratory data suggest dual PD-(L)1 + CTLA-4 blockade (with chemotherapy) performs relatively better in PD-L1-negative disease, at the cost of more immune toxicity.
- Q98 · A** Second primaries occur at about 1–2% per patient-year for many years, which is why annual low-dose CT continues beyond 5 years and smoking cessation remains vital.
- Q99 · B** Loss of TP53 and RB1 is near-universal. Targetable drivers are essentially absent in de novo small cell lung cancer.
- Q100 · A** DLL3 is aberrantly expressed on the surface of most small cell cancers; tarlatamab bridges DLL3 to CD3 on T cells. Testing is not required before treatment.
- Q101 · C** CONVERT did not show superiority of once-daily radiotherapy; survival and toxicity were similar, so both schedules are used, starting early with chemotherapy.
- Q102 · C** With MRI surveillance as the comparator, PCI did not improve survival. Either strategy is acceptable; the MAVERICK trial is testing this further.
- Q103 · A** Accelerated hyperfractionation improved 5-year survival (about 26% vs 16%) at the cost of more grade 3 oesophagitis. CONVERT later showed once-daily 66 Gy was not superior to twice-daily 45 Gy.
- Q104 · C** ADRIATIC established consolidation durvalumab for up to 2 years after chemoradiation in limited-stage small cell lung cancer, with a large overall survival gain.
- Q105 · B** Relapse within 6 months of first-line treatment indicates resistance; DeLLphi-304 showed tarlatamab, a DLL3/CD3 bispecific, improved overall survival over standard chemotherapy (lurbinectedin or topotecan are alternatives). After 6 months, tarlatamab or platinum rechallenge are both reasonable.
- Q106 · A** Resected node-negative small cell carcinoma still has high micrometastatic risk: adjuvant chemotherapy is given; nodal involvement would add radiotherapy.
- Q107 · E** IMforte showed improved progression-free and overall survival in selected patients without progression after induction; patients with brain metastases were not the target population.
- Q108 · C** Median survival rose from about 10.3 months to 12.3–13.0 months. The modest median gain hides a durable tail; benefit did not depend on PD-L1.

Q109 · C Hyperlipidaemia is the commonest lorlatinib effect and is managed with statins ($\pm$ fibrates) while continuing the drug; mood, cognitive and weight changes are also watched.

Q110 · C Brigatinib can cause early pulmonary toxicity in the first week, which is why treatment starts at a lower step-up dose. Hold the drug, exclude infection and embolism, and treat supportively.

Q111 · A Pyrexia is a class effect of dabrafenib + trametinib: interrupt at the first fever, treat symptoms, exclude infection, and restart when settled; steroid prophylaxis can help recurrent episodes.

Q112 · B MET inhibitors block tubular creatinine secretion, raising serum creatinine without true GFR loss; a normal cystatin C supports this. Peripheral oedema is the commonest troublesome effect.

Q113 · B Myocarditis with myositis and myasthenia-like features is a rare but often fatal immune toxicity, usually in the first 1–3 months. Stop permanently, give high-dose IV steroids urgently, monitor in hospital and escalate immunosuppression if needed.

Q114 · B Rifampicin is a strong CYP3A inducer. It reduces exposure to most TKIs, and the lorlatinib combination caused serious liver injury. Coordinate with the TB programme to use regimens without strong induction.