NEET SS 2024 Medical Oncology Group

Question Paper

Conducted by NBEMS

General Instructions

(i) This question paper consists of **150 questions**. All questions are **compulsory**.

(ii) Total duration of exam is **2 hours 30 minutes** (150 minutes).

(iii) Total marks is **600**.

(iv) Each correct response carries **4 marks**, while **1 mark** is deducted for every incorrect answer.

1. A patient with renal cell carcinoma on Sunitinib therapy for the past 2 years develops hand-foot syndrome, fatigue, and mild hypertension. What is the appropriate management in this case?

(A) Reduce Sunitinib dose and add anti-hypertensive
(B) As symptoms are mild, and will subside by themselves, observe
(C) Steroids to be given for Hand foot syndrome and fatigue
(D) Change to another TKI

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2. In a patient with chronic Superior Vena Cava Obstruction (SVCO), which of the following is the most characteristic chronic change observed?

(A) Azygos dilatation
(B) Portosystemic shunt
(C) Subclavian pulmonary shunt
(D) Left gastric varices

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3. In the management of Tumour Lysis Syndrome, which of the following is not useful?

(A) Allopurinol
(B) Rasburicase
(C) Febuxostat
(D) Steroids

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4. A patient receiving chemotherapy is premedicated with a 5-HT_3 receptor antagonist and steroids, but continues to experience vomiting after treatment. What additional agent should be given?

(A) Further D2 blockade with drugs like Haloperidol
(B) Increasing dose of 5HT3 antagonist
(C) Benzodiazepine
(D) Add Aprepitant from the next cycle

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5. Which of the following anti-HER2 targeted therapies is least likely to be used as a single-agent (monotherapy) treatment in the standard clinical practice for HER2-positive breast cancer?

(A) Trastuzumab
(B) Ado Trastuzumab Emtansine
(C) Trastuzumab Deruxtecan
(D) Pertuzumab

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6. A 65-year-old man with recently diagnosed small cell lung cancer (SCLC) presents with confusion and lethargy. Laboratory evaluation shows serum sodium 114 mEq/L, low BUN and creatinine, plasma osmolality 240 mOsm/kg, and urine osmolality 450 mOsm/kg. Which paraneoplastic syndrome most likely explains these findings?

(A) SIADH (Syndrome of Inappropriate Antidiuretic Hormone)

(B) Cerebral salt wasting

(C) Hypercalcemia of Malignancy (HCM)

(D) Ectopic ACTH Syndrome

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7. Which of the following is not a treatment for metastatic pancreatic cancer?

(A) FOLFIRINOX

(B) Gemcitabine Nabpaclitaxel

(C) Gemcitabine-Erlotinib

(D) Capecitabine-Erlotinib

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8. What is the primary advantage of using a totally implanted central venous access device (Port-a-Cath) over repeated peripheral intravenous cannulations for a patient receiving long-term, non-emergent chemotherapy?

(A) Prevent repeated pricking for venous access

(B) It has zero risk of catheter-related bloodstream infection

(C) It is essential for infusing all non-vesicant (non-blistering) chemotherapy agents.

(D) It allows for immediate therapeutic effects of drugs delivered through it

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9. Which Artificial Intelligence technology is primarily utilised for image analysis in fields like pathology (biopsy reporting) and radiology (imaging)?

(A) Convolutional neural network (CNNs)

(B) Recurrent Neural Network (RNN)

(C) Reinforcement Learning

(D) Generative Adversarial Network (GAN)

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10. Respiratory depression caused by opioids is mediated through which receptor?

(A) Mu

(B) Kappa

(C) Lambda

(D) Delta

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11. Which among the following is the most common cardiac side effect of cisplatin?

(A) Ischemic heart disease/MI

(B) Systemic hypertension

(C) Pericarditis

(D) QT prolongation

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12. Which is the main area where Artificial Intelligence (AI) algorithms can provide significant assistance when analyzing data from a liquid biopsy (e.g., cell-free DNA)?

(A) Remove the need for any subsequent tissue biopsy confirmation.

(B) Help identify, classify, and track genetic mutations or resistance mechanisms

(C) Can predict stage without conventional imaging

(D) Can eliminate the need of blood sampling

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13. In a patient receiving the second cycle of gemcitabine, what is the most common adverse effect that should be monitored?

(A) Myelosuppression

(B) Pneumonitis

(C) Hepatitis

(D) Neuropathy

14. A 70-year-old patient has an IgA kappa M-protein level of 3.5 g/dL and 40% clonal plasma cells on bone marrow biopsy, with no evidence of hypercalcemia, renal impairment, anaemia, or bone lesions (normal MRI). What is the most likely diagnosis?

(A) MGUS
(B) Smoldering Multiple Myeloma
(C) Multiple Myeloma
(D) Waldenström Macroglobulinemia

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15. What is the primary mechanism of anabolic steroids in cancer cachexia?

(A) Decrease inflammatory environment
(B) Induce an immediate sense of hunger, leading to increased total caloric intake.
(C) Increase the synthesis and preservation of lean body mass (skeletal muscle).
(D) Promote the efficient conversion of ingested nutrients into adipose tissue

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16. Which of the following systemic mediators, though involved in appetite and energy balance, is not primarily classified as a core pro-inflammatory cytokine driving the systemic catabolism and muscle wasting characteristic of the cancer cachexia syndrome?

(A) Leptin
(B) Tumor Necrosis Factor (TNF-α)
(C) Interleukin-1 (IL-1)
(D) Interleukin-6 (IL-6)

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17. Which of the following findings in an asymptomatic patient with Chronic Lymphocytic Leukemia (CLL) is a recognized complication but does not warrant immediate initiation of systemic chemotherapy or targeted therapy?

(A) Lymphocyte doubling time less than 3 months

(B) Fatigue/weight loss

(C) Night sweats

(D) Hypogammaglobulinemia

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18. A 35-year-old woman, previously treated 8 years ago for Hodgkin Lymphoma (HL) with combination chemotherapy and mediastinal radiation, is now planning her first pregnancy. Which of the following represents the most significant long-term implication of her prior treatment?

(A) Decreased fertility

(B) Birth canal defects

(C) Increased risk of preterm delivery due to pelvic radiation

(D) Increased chances of abortion/miscarriage due to chemotherapy

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19. A patient with T-cell Acute Lymphoblastic Leukemia (T-ALL) presents with fever, cytopenias, and hepatosplenomegaly, raising suspicion for cytokine-mediated Hemophagocytic Lymphohistiocytosis (HLH). Which of the following laboratory findings is NOT typically seen in active, untreated HLH?

(A) Hypertriglyceridemia

(B) Elevated soluble IL-2

(C) Hyperfibrinogenemia

(D) Raised ferritin $> 500\ \mu g/L$

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20. In a patient with acute hyperuricemic nephropathy, what is the expected urinary uric acid to urinary creatinine ratio?

(A) $=1$

(B) <1

(C) >1

(D) >2

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21. Among the following anthracycline chemotherapeutic agents, all of which carry a risk of dose-dependent, irreversible cardiotoxicity (dilated cardiomyopathy), which one is widely recognized in clinical practice to have the lowest overall potential for cardiotoxicity at equipotent therapeutic doses?

(A) Epirubicin

(B) Idarubicin

(C) Doxorubicin

(D) Daunorubicin

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22. Which organism is most commonly implicated in febrile neutropenia?

(A) Streptococcus pneumoniae

(B) Pseudomonas

(C) Escherichia coli

(D) Enterococci

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23. Which of the following is NOT associated with Paclitaxel-induced cardiotoxicity?

(A) Asymptomatic bradycardia

(B) Non-ischemic cardiomyopathy

(C) Ventricular fibrillation

(D) Hypertension

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24. Endomyocardial biopsy from a patient with cardiotoxicity shows diffuse vacuolar degeneration of myocytes and extensive myofibrillar loss. Which cytotoxic drug most commonly

causes this pattern?

(A) Doxorubicin

(B) Alcohol

(C) Trastuzumab

(D) Cyclophosphamide

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25. A trigger point injection is a minimally invasive intervention primarily used to treat which type of pain syndrome?

(A) Focal muscle pain

(B) Neuropathic pain

(C) Dermatomal pain

(D) Radicular or dermatomal pain

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26. Among the following functional pancreatic neuroendocrine tumors (pNETs), which one carries the highest intrinsic risk of malignancy or metastasis at diagnosis?

(A) Gastrinoma

(B) Insulinoma

(C) Glucagonoma

(D) VIPoma

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27. Which of the following statements is TRUE regarding the transdermal fentanyl patch in the management of chronic cancer pain?

(A) It is generally avoided in patients who are severely cachectic

(B) It is recommended as first-line opioid for acute breakthrough pain

(C) Initiation leads to immediate response necessitating stopping other drugs

(D) It is safe to use in opioid-naïve patients at the lowest dose

28. A 55-year-old patient with metastatic melanoma on Ipilimumab (CTLA-4 inhibitor) develops Grade 4 diarrhea (>10 stools/day). What is the most appropriate initial management step for this immune-related adverse event (irAE)?

(A) Discontinue and start corticosteroids with taper over 4–8 weeks
(B) Discontinue and taper over 7 days to preserve drug function
(C) Restart immunotherapy once resolved
(D) Reduce dose

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29. A 70-year-old male with lung cancer presents with facial swelling, distended neck veins, and dyspnea that worsen when lying down. Physical findings suggest Superior Vena Cava Obstruction (SVCO). What is the most appropriate initial diagnostic or therapeutic step?

(A) Start palliative radiotherapy immediately
(B) Immediate initiation of high-dose corticosteroids
(C) Schedule a conventional X-ray and MRI
(D) Perform a contrast-enhanced CT scan of the chest

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30. A patient receiving an Irinotecan-based chemotherapy regimen develops diarrhea (requiring hospitalization and IV fluids) two days after drug administration. After ruling out infection, what is the most appropriate specific treatment for this late-onset Irinotecan-induced diarrhea?

(A) Loperamide
(B) Atropine
(C) Methylprednisolone
(D) Octreotide

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31. Which of the following is least likely to be the underlying cause of Superior Vena Cava Obstruction (SVCO)?

(A) Lymphoma
(B) Thymic Carcinoma
(C) Non–Small Cell Lung Carcinoma (NSCLC)
(D) Carcinoma Breast

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32. What is the most likely cause of hypercalcemia in a patient with lymphoma?

(A) 1,25-dihydroxy vitamin D
(B) ACTH
(C) Transforming Growth Factor (TGF)-Beta
(D) Parathyroid hormone

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33. Which of the following statements is not true regarding testicular tumors?

(A) Approximately 90–95% of all testicular tumors are Germ Cell Tumors (GCTs)
(B) Choriocarcinoma is the most common subtype, with a prevalence of 50% among GCTs
(C) Antitumor antibiotics are often used as a component of curative treatment regimens
(D) Platinum-based chemotherapy is the cornerstone of systemic treatment for metastatic disease

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34. A lady with ovarian carcinoma on chemotherapy (Khorana score = 2) presents with right calf swelling. Ultrasound shows small saphenous vein thrombophlebitis but no deep vein thrombosis (DVT). What is the next step in management?

(A) Monitor carefully for venous thromboembolism (VTE) and continue chemotherapy
(B) Start aspirin and observe
(C) Direct oral anticoagulants (DOACs) for 3 months
(D) Start low molecular weight heparin and compression stockings

35. What is the most useful method for fertility preservation in female cancer patients before initiating chemotherapy?

(A) Ovarian tissue preservation
(B) Oocyte cryopreservation
(C) Ovarian transposition (Oophoropexy) to move the ovaries out of the radiation field
(D) Administration of GnRH agonists to temporarily suppress the ovaries

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36. Which of the following anticancer drugs carries the highest risk of infertility in patients?

(A) Cyclophosphamide
(B) Methotrexate
(C) Busulfan
(D) Adriamycin

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37. What is the empirical antibiotic regimen for febrile neutropenia in patients at high risk of infections?

(A) Meropenem alone
(B) Ceftriaxone
(C) Piperacillin + Gentamicin
(D) Vancomycin alone

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38. A patient with Medullary Thyroid Carcinoma (MTC) undergoes total thyroidectomy and central neck dissection. Which of the following findings is least likely to be an indication for postoperative radiotherapy (RT)?

(A) Bulky neck nodes

(B) Extrathyroid extension

(C) High calcitonin

(D) Residual disease

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39. CDK 4/6 inhibitors act on which phase of the cell cycle?

(A) G0 to G1

(B) S to G2

(C) G2 to M

(D) G1 to S

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40. Which of the following statements regarding the characteristics of chronic cancer-related pain is NOT true?

(A) Dull persistent pain managed by standard analgesics

(B) Cancer pain is often a mixture of nociceptive (somatic/visceral) and neuropathic components

(C) Pain should be managed according to the WHO analgesic ladder, stepping up from non-opioids to strong opioids as needed

(D) Breakthrough pain is a transient, severe flare-up of pain that must be treated with immediate-release opioids

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41. Which hepatic benign lesion has malignant potential?

(A) Focal nodular hyperplasia

(B) Hepatic adenoma

(C) Benign micronodules

(D) Hemangioma

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42. An adult patient successfully treated for Acute Myeloid Leukemia (AML) with allogeneic hematopoietic stem cell transplantation (HSCT) 8 years ago presents with persistent symptoms including xerostomia, dysphagia, and generalized fatigue. No evidence of disease recurrence or acute infection is found. What is the most likely long-term complication causing this constellation of symptoms?

(A) Radiation-induced esophageal effect
(B) GVHD affecting salivary gland
(C) Post-transplant infection (viral, fungal)
(D) Secondary malignancy due to immunosuppression

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43. A patient receiving treatment for Acute Lymphoblastic Leukemia (ALL) develops pancreatitis. Which of the following antileukemic agents is the most common cause of this complication?

(A) L-Asparaginase
(B) Vincristine
(C) Daunorubicin
(D) Dexamethasone

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44. A patient with BRCA-mutated ovarian cancer was diagnosed in January 2024 and completed chemotherapy in July 2024. In February 2025, her CA-125 levels are elevated, and recurrence is noted on imaging. The patient is asymptomatic. What is the next step in management?

(A) Platinum chemotherapy
(B) Non-platinum chemotherapy
(C) Olaparib (PARP inhibitor, as patient is BRCA mutant)
(D) Observation and follow-up

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45. What is the treatment of opioid induced constipation?

(A) Stimulant laxative like senna

(B) Naloxone

(C) Peripheral mu antagonist like Methylnaltrexone

(D) Dietary modification alone

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46. How is the presence of an invasive fungal infection most commonly evaluated using non-culture-based serum testing?

(A) 1,3 Beta D-glucan assay

(B) Galactomanan antigen assay

(C) Cryptococcal antigen test

(D) Polymerase Chain Reaction

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47. Which antidepressant is associated with the least sexual dysfunction?

(A) Venlafaxine

(B) Fluoxetine

(C) Escitalopram

(D) Bupropion

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48. All are used in the treatment of hypercalcemia except:

(A) Denosumab

(B) Bisphosphonates

(C) Steroids

(D) Hydration with diuretic

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49. Which of the following genetic abnormalities commonly found in Multiple Myeloma is not classified as a high-risk feature?

(A) t (4:14)

(B) t (11;14)

(C) t (14:16)

(D) Del 17p

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50. A 50-year-old female patient with a weight of 55kg and a serum creatinine of 0.8mg/dL requires Carboplatin treatment with a target Area Under the Curve (AUC) of 5. What is the total calculated dose of Carboplatin required?

(A) 490 mg

(B) 385 mg

(C) 560 mg

(D) 625 mg

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51. Which is true regarding timing of doxorubicin induced cardiotoxicity?

(A) Develops by 1 month of stopping therapy

(B) May develop upto 1 year post stopping therapy

(C) May develop decades after stopping therapy

(D) May develop only during the infusion

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52. Which of the following metastatic sites in Gestational Trophoblastic Neoplasia is not considered high-risk?

(A) Lung

(B) Brain

(C) Gastrointestinal tract

(D) Kidney

53. A patient with non–small cell lung cancer develops anemia and nephrotoxicity after the third cycle of Pemetrexed-Cisplatin chemotherapy. Which of the following drugs is most likely responsible for these adverse effects?

(A) Cisplatin
(B) Pemetrexed
(C) Paclitaxel
(D) Carboplatin

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54. What is the ideal management for Stage IB2 cervix cancer?

(A) Radical hysterectomy
(B) Radical hysterectomy f/b Radiation therapy and brachytherapy
(C) Chemo Radiation therapy followed by brachytherapy
(D) Neo adjuvant chemo followed by surgery

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55. A 78-year-old male with metastatic prostate cancer presents with multiple vertebral lytic lesions, including an L1 vertebral collapse causing spinal cord compression and mild neurological deficit. What is the appropriate management for this condition?

(A) Spinal RT with boost to L1
(B) Spine stabilization surgery
(C) Immobilisation with brace and zoledronic acid
(D) Continue chemotherapy

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56. A patient treated for acute lymphoblastic leukemia (ALL) with both systemic chemotherapy and prophylactic cranial radiotherapy present 2 years later with headache and diplopia. What is the most likely cause?

(A) Leukemia recurrence

(B) Radiation-induced second malignancy

(C) Pituitary adenoma

(D) Cerebrovascular side effect

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57. Which malignant tumor is primarily defined by the recurrent chromosomal translocation t(11;22) (q24;q12)?

(A) Ewing Sarcoma

(B) Clear Cell Sarcoma

(C) Desmoplastic Small Round Cell Tumor

(D) Rhabdomyosarcoma

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58. What is the most common mutation seen in malignant melanoma?

(A) BAP1

(B) BRAF

(C) NF1

(D) NRAS

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59. In carcinoma vulva, which of the following is not a prognostic factor?

(A) Tumor grade

(B) Depth of invasion

(C) Positive lymph nodes

(D) Lymphovascular space invasion (LVSI)

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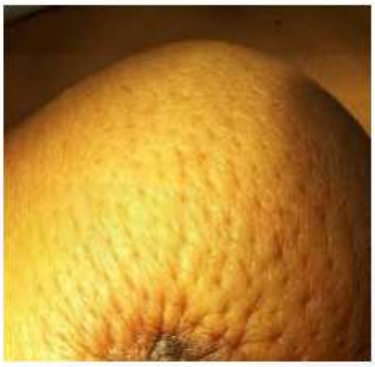
60. Based on the clinical image, what is the T stage of this tumor?



(A) T4b

(B) T4a

(C) T2

(D) T3

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61. Which of the following is not a laboratory criterion of Tumor Lysis Syndrome (TLS)?

(A) Serum potassium > 8 mEq/L

(B) Serum uric acid > 8 mg/dL

(C) Serum calcium < 7 mg/dL

(D) Serum phosphate < 4.5 mg/dL

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62. Which of the following is not a clinical manifestation of Tumor Lysis Syndrome (TLS)?

(A) Seizures

(B) Respiratory failure

(C) Renal failure / Creatinine increase

(D) Arrhythmia

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63. Which of the following chemotherapy agents has the least gonadotoxic risk in females?

(A) Methotrexate

(B) Busulfan

(C) Cyclophosphamide

(D) Ifosfamide

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64. What is the most likely cause of male infertility after chemotherapy?

(A) Cyclophosphamide

(B) Vincristine

(C) Paclitaxel

(D) Bleomycin

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65. Which cell type is most sensitive to chemotherapy-induced cytotoxicity, leading to azoospermia in males?

(A) Leydig cell

(B) Spermatogonial cell

(C) Germ cell

(D) Sertoli cell

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66. TLS (Tumour Lysis Syndrome) occurs within how many days of chemotherapy?

(A) 1-5 days

(B) 5-10 days

(C) More than 20 days

(D) 1 month

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67. What is the most suitable line for short term chemo administration?

(A) PICC

(B) CVC

(C) Peripheral iv line

(D) Port-a-Cath

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68. A patient with Hodgkin Lymphoma presents with right cervical and mediastinal lymph node enlargement, associated with B symptoms and splenic involvement. What is the stage according to the Ann Arbor staging system?

(A) II BES

(B) III BES

(C) III BS

(D) II BS

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69. The most appropriate management plan for a patient with massive pulmonary thromboembolism (PTE) presenting with hypoxia but normal blood pressure (normotensive), who is currently on Sunitinib for renal cell carcinoma, is:

(A) Start warfarin and consider for thrombolysis

(B) Start DOAC with apixaban

(C) Start low molecular weight heparin and continue for 6 months

(D) Thrombolysis with alteplase and anticoagulation with low molecular weight heparin

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70. What is the primary accepted mechanism of anthracycline cardiotoxicity?

(A) Inhibition of Topoisomerase II in cardiocytes

(B) Damage by reactive oxygen radicals

(C) Endothelial damage

(D) Direct interference with L-type calcium channels

71. Which of the following statements best defines the concept of the Ceiling Effect in pharmacology?

(A) Adding further dose will be less likely to produce effects
(B) The lowest dose of a drug required to achieve a therapeutic effect
(C) The point at which a drug's absorption rate equals its elimination rate
(D) An adverse drug reaction that is unpredictable and not dose-related

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72. An elderly man with bone metastasis, receiving intravenous opioids, with respiratory rate of 8/min. Which of the following should not be administered?

(A) Pentazocine
(B) Nalbuphine
(C) Fentanyl
(D) Buprenorphine

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73. Which of the following is included in the Khorana Score?

(A) Pre chemo HB
(B) Performance status
(C) History of previous VTE
(D) D-dimer level

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74. Which of the following interventions is the most critical in Central Venous Catheter (CVC) nursing care to prevent Catheter-Related Bloodstream Infection (CRBSI)?

(A) Sterile hand technique while handling and dressing
(B) Flushing before and after chemo
(C) Applying a transparent dressing and ensuring it remains clean, dry, and intact.

(D) Using positive pressure flushing technique upon catheter disconnection.

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75. In case of not flowing or slowed IV line chemo. How do you manage further?

(A) Stop infusion and Look for warmth and extravasation signs
(B) Stop infusion and flush
(C) Remove line
(D) Stop and inform doctor

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76. What is the most common complication of a Peripherally Inserted Central Catheter (PICC) line, and how can it be mitigated?

(A) Block due to fibrin clot, managed by heparin flush
(B) Catheter-related bloodstream infection (CRBSI), managed by removal of the line and broad-spectrum antibiotics
(C) Infection, prevented by hand hygiene with regular dressing
(D) Catheter dislodgement or migration, managed by securement devices and verification of tip location

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77. Which of the following interventions is the single most effective and essential practice to prevent Central Line Associated Bloodstream Infection (CLABSI)?

(A) Replacing the administration set (IV tubing) every 24 hours
(B) Scrubbing the catheter hub (needleless connector) vigorously with an appropriate antiseptic before every access
(C) Performing daily blood cultures to monitor for early infection signs
(D) Routinely replacing the CVC every 7 days to prevent bacterial colonization

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78. A patient is on morphine SR 90 mg thrice daily. What is the appropriate breakthrough dose of immediate-release (IR) morphine for pain management?

(A) 60 mg IR every 4 hours
(B) 30 mg IR every 4 hours
(C) 15 mg IR every 4 hours
(D) 25 mg IR every 4 hours

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79. What is the main advantage of using an infusion pump during chemotherapy administration?

(A) Slow and steady delivery
(B) To allow regulated drug dose delivery
(C) Allows the patient to choose infusion rate
(D) Allows faster delivery and patient ambulation

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80. Which of the following represents the most pertinent issue faced by cancer survivors?

(A) Dealing with long-term and late effects of cancer treatment
(B) Biggest hassle is the anxiety of recurrence
(C) Financial burden for the family
(D) Social change of outlook

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81. Which of the following statements is NOT true regarding the chemotherapeutic drug cisplatin?

(A) Moderately emetogenic
(B) Can cause nephrotoxicity
(C) Used to treat testicular, ovarian, and bladder cancers
(D) Requires vigorous hydration during administration

82. A 68-year-old male with Chronic Lymphocytic Leukemia (CLL) is started on a targeted oral therapy. Shortly after initiation, he develops new-onset atrial fibrillation. Which of the following CLL drugs is most likely responsible for this adverse effect?

(A) Ibrutinib
(B) Fludarabine
(C) Chlorambucil
(D) Rituximab

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83. A 27-year-old male presents for a routine check-up. His reports show: • Hemoglobin: 17 g/dL • TLC: 12,000/μL • Platelet count: $3.5 \times 10^5/\mu$L Plasma volume is confirmed to be normal. What is the most likely diagnosis?

(A) Polycythemia vera
(B) Apparent polycythemia
(C) Secondary polycythemia without hypoxia
(D) Secondary polycythemia with hypoxia

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84. Annual MRI is not a screening modality for breast cancer in which of the following patients?

(A) Previous history of breast cancer
(B) Untested first-degree relative of a BRCA carrier
(C) History of radiation for Hodgkin's lymphoma
(D) BRCA mutation carrier

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85. Which scoring system is commonly used to assess the risk of complications in patients with febrile neutropenia?

(A) MASCC

(B) APACHE

(C) Glasgow

(D) MELD

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86. Which of the following drugs is used for thyroid malignancy post-radioiodine ablation for residual or metastatic tumour?

(A) Tyrosine kinase inhibitor

(B) 5-Fluorouracil

(C) Methotrexate

(D) Doxorubicin

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87. Which of the following agents is used as a chemoprotectant to reduce the risk of Doxorubicin-induced cardiotoxicity?

(A) Dexrazoxane

(B) Dimethyl Sulfoxide (DMSO)

(C) Mesna

(D) Leucovorin

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88. Which of the following drugs or administration strategies is NOT an established or clinically utilized method for the prevention or significant reduction of doxorubicin-induced cardiotoxicity?

(A) Dexrazoxane administration

(B) Ivabradine administration

(C) Use of Liposomal Doxorubicin formulation

(D) Utilizing a prolonged continuous infusion (e.g., over 96 hours)

89. Which of the following metabolic abnormalities is LEAST likely to be a direct consequence or feature of acute, untreated Tumor Lysis Syndrome (TLS)?

(A) Hyperkalemia
(B) Hyperphosphatemia
(C) Hypercalcemia
(D) Hyperuricemia

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90. What is the primary reason Pomalidomide is generally considered more effective than Lenalidomide, especially in Lenalidomide-refractory patients?

(A) It has a significantly reduced risk of hematotoxicity
(B) It has a significantly reduced risk of neurotoxicity
(C) It is more potent and can overcome resistance mechanisms developed against Lenalidomide
(D) It has a reduced incidence of venous thromboembolic complications

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91. A 55-year-old patient receiving Pembrolizumab for melanoma presents with an acute, severe case of immune checkpoint inhibitor (ICI)-induced myocarditis. Initial high-dose corticosteroid therapy fails to improve his condition after 48 hours. Which of the following immunomodulatory agents is the most appropriate next-line treatment for this steroid-refractory, life-threatening immune-related adverse event?

(A) Abatacept
(B) Anakinra
(C) Infliximab
(D) Adalimumab

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92. Afatinib is not useful in which of the following EGFR mutations?

(A) Exon 20 insertion

(B) Exon 19 deletion

(C) G716X

(D) L858R

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93. Most commonly used route for chemotherapy?

(A) Midline infusion pump

(B) PICC line

(C) Central line

(D) Peripheral line

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94. A 65-year-old male with muscle-invasive bladder cancer and normal creatinine clearance is being considered for neoadjuvant chemotherapy. What is the chemotherapy regimen of choice?

(A) Cisplatin + Gemcitabine

(B) Cisplatin + Paclitaxel

(C) Carboplatin + Gemcitabine

(D) Carboplatin + Paclitaxel

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95. What is the specific cutoff value for the total leukocyte count (TLC) that is used to assign one risk point in the Khorana scoring system?

(A) TLC $\geq 11,000/\mu$L

(B) TLC $\geq 12,000/\mu$L

(C) TLC $\geq 15,000/\mu$L

(D) TLC $\geq 20,000/\mu$L

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96. Which of the following is false about the International Index of Erectile Function (IIEF)?

(A) It is primarily used for the diagnosis and scoring of premature ejaculation.
(B) It has various components including sexual desire, satisfaction, etc.
(C) It is applicable for men with all types of sexual orientation.
(D) It has 15 self-administered questions.

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97. Which of the following internationally validated scoring instruments is the most specific and widely accepted patient-reported outcome measure (PROM) for quantifying the severity and functional domains of ED in cancer survivors post radical prostatectomy or pelvic radiation?

(A) International Index of Erectile Function (IIEF-15/IIEF-5)
(B) Sexual Health Inventory For Men (SHIM)
(C) Patient Health Questionnaire (PHQ-9)
(D) International Prostate Symptom Score (IPSS)

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98. A 62-year-old male with a history of lung cancer presents with increasing dyspnea and pleuritic chest pain. Thoracentesis reveals a massive, exudative pleural effusion with a pleural fluid pH of 7.15. Given these findings, the most likely underlying etiology of the effusion is:

(A) Malignancy
(B) Tuberculous (TB) Pleuritis
(C) Complicated parapneumonic effusion (Bacterial empyema)
(D) Rheumatoid pleuritis

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99. Leptomeningeal metastasis associated most commonly with?

(A) Melanoma
(B) Ovary
(C) Breast

(D) Gastrointestinal

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100. A 58-year-old patient with non-small cell lung cancer presents to the emergency department with severe facial swelling, bilateral upper limb edema, and respiratory distress due to Superior Vena Cava Obstruction (SVCO). Which of the following therapeutic modalities provides the most rapid and effective relief of this life-threatening obstructive crisis?

(A) Endovascular stenting
(B) Balloon angioplasty
(C) Immediate high-dose systemic chemotherapy
(D) Urgent palliative radiotherapy

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101. Which of the following is not true about Olaparib

(A) It is a PARP inhibitor
(B) Most common lab abnormality reported is cytopenias and hypomagnesemia
(C) Most common adverse effects are nausea vomiting and fatigue
(D) 90% excreted by kidney

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102. Chemotherapy drugs act mainly on which phase of cell cycle?

(A) M phase
(B) S phase
(C) G1 phase
(D) G2 phase

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103. Which of the following statements about doxorubicin-induced cardiotoxicity is false?

(A) Acute cardiotoxicity is irreversible and often progresses to cardiomyopathy

(B) Chronic cardiotoxicity is dose-dependent and typically presents as a dilated cardiomyopathy

(C) Cumulative lifetime doses exceeding 500mg/m^2 significantly increase the risk of chronic cardiotoxicity

(D) Dexrazoxane can be administered to prevent the most severe form of chronic cardiotoxicity

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104. A patient with widespread malignant melanoma and extensive pulmonary metastases presents with severe dyspnea and high anxiety. Which of the following agents is generally NOT recommended as a primary intervention for the management of the dyspnea component in this palliative care setting?

(A) Morphine

(B) Steroids

(C) Benzodiazepines

(D) Oxygen therapy

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105. A 45-year-old female patient with no history of prior radiation or chemotherapy was successfully treated for endometrial adenocarcinoma three years ago. She now presents a new diagnosis of colon adenocarcinoma. This combination of two primary, non-contiguous cancers is highly suggestive of an underlying hereditary predisposition. Which of the following inherited cancer syndromes is the most likely diagnosis?

(A) Lynch syndrome

(B) Cowden syndrome

(C) Familial Adenomatous Polyposis (FAP)

(D) Peutz-Jeghers syndrome

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106. Which of the following statements is TRUE regarding HPV-positive Squamous Cell Carcinoma (SCC) of the head and neck?

(A) HPV status does not significantly impact the prognosis or overall survival compared to HPV-negative disease.
(B) The response rate to standard chemotherapy and radiation protocols is worse than in patients with HPV-negative disease.
(C) HPV-positive tumors typically arise in patients with a heavy smoking and alcohol history, similar to HPV-negative tumors.
(D) HPV most commonly causes non keratinizing cancer

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107. Which is the mechanism of neutrophil dysfunction in febrile neutropenia?

(A) CXCR downregulation and less chemotaxis
(B) NADPH oxidase dysfunction and phagocytosis defect
(C) Chemo induced neutrophil apoptosis
(D) Maturation block of neutrophil

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108. Which of the following is the most frequent and dose-limiting cutaneous toxicity specifically associated with Capecitabine therapy?

(A) Hand foot Syndrome
(B) Interstitial pneumonitis
(C) Nephrotoxicity
(D) Peripheral neuropathy

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109. During infusion of a platinum based chemotherapeutic agent, a patient develops acute throat tightness, jaw pain, and distal paresthesias. These symptoms are known to worsen immediately upon exposure to which environmental factor?

(A) Cold exposure
(B) High-intensity exercise
(C) Consumption of high-sugar foods

(D) Exposure to bright light

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110. Which of the following statements is TRUE regarding the evidence and clinical outcomes associated with routine breast cancer screening mammography for women at average risk?

(A) Randomized controlled trials have consistently demonstrated a significant breast cancer survival advantage for women screened in the 50 to 74 years age range.
(B) The false-positive rate for a single screening mammogram is lowest in the 40-49 age range compared to women aged 50 and older.
(C) Screening mammography is primarily recommended to detect ductal carcinoma in situ (DCIS), which has the greatest impact on reducing mortality.
(D) The most recent U.S. Preventive Services Task Force (USPSTF) guidelines recommend discontinuing screening at age 65.

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111. What is a major limitation of AI in medical imaging?

(A) Cost effectiveness
(B) Lack of interpretability
(C) Eliminates the need for clinicians
(D) All of the above

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112. A patient receiving first-cycle chemotherapy via a new central venous catheter suddenly develops fever (102.5°F) with chills during infusion, but no rash or local inflammation. What is the likely diagnosis and next step?

(A) Hemorrhagic reaction – give Vitamin K
(B) Allergic reaction – give antihistamine
(C) Catheter-related bloodstream infection (CRBSI) – send cultures
(D) Thrombus dislodgement – remove central line

113. What is the role of AI in the pre-processing of images?

(A) Data segmentation

(B) Edge detection

(C) Feature extraction

(D) All of the above

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114. During oxaliplatin infusion, a patient develops perioral tingling and sensation of choking (laryngospasm). What is the most likely cause?

(A) Oxaliplatin-induced cold hypersensitivity

(B) Irinotecan

(C) Oxaliplatin allergy

(D) Electrolyte imbalance

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115. A patient treated for a Germ Cell Tumor (GCT) with a chemotherapy regimen including Bleomycin presents months later with persistent cough and dyspnea. CT scan shows ground-glass opacities (GGOs) with reticulonodular infiltrates, suggestive of pulmonary toxicity. Which factor is NOT typically implicated in exacerbating the risk of this complication?

(A) Active smoking

(B) Cumulative bleomycin dose of 100 IU

(C) Use of GCSF

(D) Compromised renal function

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116. A patient with Kaposi Sarcoma (KS) is being treated with pegylated liposomal doxorubicin. Which of the following is considered a frequent and dose-limiting toxicity for this specific chemotherapy agent and its formulation?

(A) Hand-Foot Syndrome

(B) Hemorrhagic Cystitis

(C) Peripheral Neuropathy

(D) Ocular Toxicity

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117. Which of the following is not a type of anal cancer?

(A) Bowen Disease

(B) Paget's Disease

(C) Signet Cell Carcinoma / Adenocarcinoma

(D) Basal Cell Carcinoma

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118. Which among the following is a GM-CSF that prevents neutropenia and neutropenic infections?

(A) Sargramostim

(B) Filgrastim

(C) Romiplostim

(D) Oprelvekin

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119. A patient receiving the third cycle of a Paclitaxel infusion suddenly develops severe dyspnea, hypotension, and generalised urticaria, indicating a probable anaphylactic reaction. Assuming the infusion has been stopped, which of the following is the most immediate and life-saving intervention required?

(A) Change drug

(B) Reduce dose

(C) Epinephrine shot

(D) Give steroids and premeds with next cycle

120. A patient with small cell lung cancer (SCLC) receiving cisplatin and etoposide develops an increase in serum creatinine from 1.2 mg/dL to 3.5 mg/dL after several cycles of chemotherapy. What is the most appropriate next step in management?

(A) Adequate hydration before and after chemo
(B) Discontinue cisplatin and switch to carboplatin
(C) Discontinue cisplatin and initiate haemodialysis
(D) Dose reduction of cisplatin

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121. A patient receiving chemotherapy presents with fever (temperature >38°C) and neutropenia (absolute neutrophil count <500/mm^3). What is the first step in management?

(A) Administer granulocyte colony-stimulating factor (G-CSF)
(B) Administer broad spectrum antibiotics
(C) Obtain bone marrow biopsy
(D) Start antifungal therapy immediately

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122. A patient receiving immune checkpoint inhibitor therapy develops elevated liver enzymes. What is the most appropriate management?

(A) Reduce dose of immunotherapy
(B) Treat with infliximab
(C) Discontinue immunotherapy and put on steroids
(D) Change to another immunotherapy agent

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123. A patient who recently completed thoracic radiotherapy presents several weeks later with shortness of breath, dry cough, and low-grade fever. What would be the most appropriate management for this condition?

(A) High-dose steroids

(B) Antibiotics

(C) Antifungals

(D) High-flow oxygen

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124. A recent clinical case reported that artificial intelligence (AI) successfully identified liver lesions that were missed by a radiologist. Which statement most accurately represents the role of AI in clinical imaging?

(A) AI in imaging can help restage disease

(B) AI eliminates the need for clinicians

(C) AI is infallible and guarantees perfect diagnosis

(D) AI can only detect lesions that are visible to the human eye

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125. A 60-year-old man who has undergone radical prostatectomy is assessed for his erectile function using the International Index of Erectile Function (IIEF-5) questionnaire. His total IIEF-5 score is 18. What is the degree of erectile dysfunction (ED) based on this score?

(A) Mild

(B) Mild to moderate

(C) Moderate

(D) Severe

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126. A 50-year-old male with a 40-year smoking history presents with symptoms of superior vena cava obstruction. What is the most likely diagnosis?

(A) Germ cell tumor

(B) Lymphoma

(C) Non-small cell lung cancer

(D) Small cell lung cancer

