Specialty Certificate in Medical Oncology Sample Questions

Question 1.

A 28-year-old woman was found to have stage IV Burkitt's lymphoma. Her renal function was normal and a staging CT scan had shown no abnormality of the renal tract. Three days later, when she was about to start chemotherapy, she developed a temperature of 39.0°C with rigors and was treated with imipenem.

Investigations (the following day):

serum sodium	138 mmol/L (137–144)
serum potassium	6.2 mmol/L (3.5–4.9)
serum creatinine	215 µmol/L (60–110)
serum corrected calcium	1.60 mmol/L (2.20–2.60)
serum phosphate	1.52 mmol/L (0.8–1.4)
serum lactate dehydrogenase	1238 U/L (10–250)
serum urate	0.69 mmol/L (0.19–0.36)

What is the most likely cause of the renal impairment?

A imipenem toxicity
B intravenous contrast toxicity
C kidney infiltration
D septic shock
E tumour lysis syndrome

Question 2.

A 44-year-old woman presented with post-coital bleeding. Investigation revealed a 2-cm grade 1, stage IB1 squamous cell carcinoma of the cervix. There was no evidence of lymphovascular space invasion. She had completed her family.

What is the most appropriate treatment?

A brachytherapy
B chemo-radiotherapy
C excision cone biopsy only
D radical hysterectomy
E vaginal trachelectomy

Question 3.

A 43-year-old man presented with vomiting and 4-kg weight loss. His performance status was 1. He was found to have a pre-pyloric gastric carcinoma gastric outlet obstruction. A CT scan showed no metastases.

What is the most appropriate next step?

A chemo-radiation
B neoadjuvant chemotherapy
C palliative bypass
D radical resection
E self-expanding stent

Question 4.

A 72-year-old man was found to have an anterior rectal cancer at 2 cm from the anal verge. A CT scan of chest, abdomen and pelvis showed no evidence of metastatic disease. An MR scan of pelvis showed an anterior tumour abutting the prostate gland, radiologically staged as a T3, N1, M0 cancer.

What is the most appropriate next step in management?

A abdominoperineal resection
B chemotherapy
C long-course chemoradiation
D short-course radiotherapy
E total mesorectal excision

Question 5.

A 42-year-old man presented with a 1-month history of altered personality and increased seizure frequency. An MR scan of brain demonstrated an enhancing lesion in the right frontal lobe. Histology revealed a grade 3 oligodendroglioma, with loss of heterozygosity of 1p/19q.

What is the most appropriate treatment?

A chemoradiation with temozolomide
B cranial irradiation
C craniospinal irradiation
D procarbazine, vincristine and lomustine (PCV)
E temozolomide

Question 6.

A 50-year-old woman with early breast cancer presented with fatigue to the accident and emergency department on day 7 of her first adjuvant chemotherapy cycle. On examination, her temperature was 38.5°C, her pulse was 110 beats per minute and her blood pressure was 110/70 mmHg. A full blood count was requested.

What is the most appropriate next step?

A await full blood count result
B intravenous broad-spectrum antibiotics
C intravenous broad-spectrum antibiotics and granulocyte colony-stimulating factor (G-CSF)
D oral broad-spectrum antibiotics
E oral broad-spectrum antibiotics and G-CSF

Question 7.

A 35-year-old man sought advice about the increased risk of cardiac complications following chemotherapy. Eight years previously, he had been successfully treated for Hodgkin's disease with six cycles of doxorubicin, bleomycin, vinblastine and dacarbazine, and mediastinal radiotherapy.

For how many years from the end of treatment will this increased risk persist?

A 1–5
B 6–10
C 11–15
D 16–20
E >20

Question 8.

A 52-year-old woman presented with hot flushes. Her last menstrual period had been 1 year previously. She was treated with ethinylestradiol and medroxyprogesterone acetate.

Which potential consequence of oestrogen therapy is most reduced by co-prescription of a progestogen?

A breast cancer
B breast pain
C endometrial cancer
D mood changes
E weight gain

Question 9.

A 59-year-old man was referred because of a change in bowel habit. He had noticed no alteration in stool calibre, gastrointestinal bleeding or unintended weight loss. There was no family history of colonic polyps or gastrointestinal malignancy.

Physical examination was normal. A rectal examination revealed no masses. A sigmoidoscopy revealed a 4-mm polyp in the mid-rectum, which was removed with forceps, and histology revealed a tubular adenoma.

What is the most appropriate next step in management?

A barium enema now
B colonoscopy in 3 years
C colonoscopy in 5 years
D colonoscopy now
E sigmoidoscopy in 1 year

Question 10.

A 58-year-old man presented with haemoptysis, weight loss and worsening breathlessness. He was a lifelong heavy smoker. His chest X-ray was abnormal. A CT scan of chest and abdomen demonstrated a large mass in the right lower lobe invading into the mediastinum and pericardium, extensive mediastinal lymphadenopathy, and bone metastasis (T4, N3, M1b). Bronchoscopy and biopsy confirmed a squamous cell carcinoma. Mutation analysis revealed that EGFR and K-ras genes were both wild type.

What is the most appropriate first-line therapy?

A docetaxel
B erlotinib
C gefitinib
D gemcitabine and cisplatin
E pemetrexed and cisplatin

Question 11.

A 55-year-old man underwent resection of a T2 clear cell renal carcinoma.

What is the most likely pathogenesis?

A activating mutations of the VHL gene
B MET oncogene activity
C mutation of p53
D up-regulated expression of HIF-controlled genes
E von Hippel–Lindau syndrome

Question 12.

A 30-year-old man presented with a swelling in the testis and an ultrasound scan confirmed the presence of a malignant mass. Following orchidectomy, he was found to have a 40-mm seminomatous germ cell tumour without non-seminomatous components. There was evidence of vascular invasion within the testis.

Investigations:

serum lactate dehydrogenase (LDH)	1250 U/L (10–250)
serum α-fetoprotein	normal
serum β-human chorionic gonadotrophin (HCG)	700 U/L (<5)

A CT scan of body showed retroperitoneal lymphadenopathy of up to 7 cm in size, a 3-cm mediastinal lymph node and over 30 pulmonary metastases. There were no signs of liver, brain or bone metastases.

What is the most appropriate International Germ Cell Cancer Collaborative Group classification?

A good prognosis because of the absence of liver, bone and brain metastases
B good prognosis because of the raised HCG and LDH
C intermediate prognosis because of the presence of lung metastases
D intermediate prognosis because of the raised serum HCG and LDH
E poor prognosis because of the raised serum HCG and LDH

Question 13.

A 29-year-old woman had a 2.5-mm Breslow thickness melanoma removed from her right shin. She was referred for wide local excision of the scar and consideration of sentinel node biopsy.

In what proportion of patients with a negative sentinel node biopsy does nodal recurrence subsequently develop in the same lymph node basin?

A <1%
B 1–4%
C 5–9%
D 10–14%
E 15–25%

Question 14.

A 59-year-old woman presented with back pain. She had no other symptoms. Nine years previously, she had undergone a mastectomy and axillary node clearance for a T2, N0, M0, grade 3, ER positive, HER2 negative breast cancer. This had been followed by six cycles of adjuvant cyclophosphamide, methotrexate and 5-fluorouracil (CMF) chemotherapy and 5 years of tamoxifen. Her performance status was 1.

Physical examination was normal.

Investigations:

full blood count	normal
serum alkaline phosphatase	325 U/L (45–105)
all other liver, renal and bone biochemistry	normal
CT scan of chest and liver	five lung metastases (largest 25 mm in diameter); solitary 1-cm metastasis in left lobe of liver
isotope bone scan	multiple hot spots throughout dorsal and lumbar spine

In addition to a bisphosphonate, what is the most appropriate systemic therapy?

A anthracycline-based chemotherapy
B aromatase inhibitor
C capecitabine chemotherapy
D tamoxifen
E taxane-based chemotherapy

Question 15.

A 65-year-old man had recently been found to have recurrent rectal cancer with a pelvic mass causing hydronephrosis. There were also liver and lung metastases. His calculated creatinine clearance was 45 mL/min.

He was about to start treatment with capecitabine in a 21-day cycle.

What dosage and duration of treatment are the most appropriate?

A 625 mg/m^2 twice daily, days 1 to 14
B 625 mg/m^2 twice daily, days 1 to 21
C 950 mg/m^2 twice daily, days 1 to 14
D 950 mg/m^2 twice daily, days 1 to 21
E 1250 mg/m^2 twice daily, days 1 to 14

Question 16.

A 25-year-old woman attended the melanoma clinic with her father, aged 53, whose history included two melanomas. They both had the atypical mole syndrome. The woman, who was red-haired, used a sunbed instead of exposing her skin to the sun, having had blistering sunburn on holidays as a child. She had poorly controlled asthma, and required frequent courses of prednisolone.

Which factor carries the strongest risk of her developing melanoma?

A atypical mole syndrome
B blistering sunburn in childhood
C corticosteroid use
D sunbed use
E type 1 skin

Question 17.

A 65-year-old woman had undergone surgery for a grade 2, T2, N1, ER positive, HER2 negative carcinoma of the breast. After six cycles of adjuvant fluorouracil, epirubicin, cyclophosphamide (FEC) chemotherapy she started taking anastrozole. A baseline bone mineral density test showed mild osteopenia (T score = –1.2). She had no other major risk factors for osteoporotic fracture.

In addition to lifestyle advice, what is the most appropriate management?

A add a calcium and vitamin D supplement
B add an oral bisphosphonate
C add tamoxifen to anastrozole
D switch anastrozole to exemestane
E switch anastrozole to tamoxifen

Question 18.

A 45-year-old woman presented with a persistent bloody vaginal discharge. Two years previously, she had been found to have a BRCA1 mutation and had undergone bilateral prophylactic mastectomy and bilateral oophorectomy. Early breast cancer had been diagnosed and she had since been taking tamoxifen.

What is the most likely diagnosis?

A carcinosarcoma of uterus
B endometrial cancer
C endometrial stromal sarcoma
D metastatic breast cancer to the uterus/pelvis
E primary peritoneal cancer

Question 19.

A 35-year-old woman had been treated with chemotherapy plus bone marrow transplant with total body irradiation conditioning for acute lymphoblastic leukaemia when aged 14. She was worried about her risk of a second cancer.

At which primary site is she at greatest risk of a second cancer?

A bone
B brain
C breast
D lung
E thyroid

Question 20.

A 79-year-old man presented to his general practitioner with lower urinary tract symptoms. Over the past 2 years he had noticed worsening urinary frequency and nocturia of up to six times per night.

On digital rectal examination, he had a very large, benign-feeling prostate. His serum prostate-specific antigen was 9.81 µg/L (<4). He proceeded to a transurethral resection of the prostate (TURP) and 62 g of tissue was resected. The pathologist detected a Gleason score 6 (3 + 3) prostatic adenocarcinoma in <5% of the prostatic chippings. Consequently, he underwent a postoperative MR scan of pelvis, which showed a prostate volume of 92 mL, a large resection cavity, no obvious residual cancer and no pelvic lymphadenopathy.

What is the most appropriate management strategy?

A active surveillance
B brachytherapy
C endocrine therapy
D external beam radiotherapy
E radical prostatectomy

Question 21.

A 52-year-old woman presented with increased abdominal distension and constipation. She had been treated 18 months previously with a total abdominal hysterectomy and bilateral salpingo-oophorectomy followed by carboplatin and paclitaxel for a stage IIIc serous ovarian adenocarcinoma. She had shown a complete radiological and biochemical response.

Investigations:

serum carcinoembryonic antigen	18 µg/L (<10)
serum CA 125	2130 U/mL (<35)
CT scan of chest, abdomen and pelvis	splenic metastases; ascites

What is the most appropriate second-line chemotherapy regimen?

A carboplatin and liposomal doxorubicin
B carboplatin and paclitaxel
C liposomal doxorubicin
D paclitaxel
E topotecan

Question 22.

A 67-year-old man presented with dysphagia and weight loss.

Endoscopy and biopsy showed a grade 3 adenocarcinoma beginning at 30 cm from the incisors, extending for 2 cm with the oesophagogastric junction at 40 cm.

An endoscopic ultrasound scan suggested invasion into, but not through, the lamina propria and no involved lymph nodes. A CT scan of chest and abdomen and FDG-PET-CT scan showed no other sites of disease.

What is the best estimate of the stage of disease?

A Ia
B Ib
C Ic
D IIa
E IIb

Question 23.

An 80-year-old man presented with vomiting and weight loss. His performance status was 2. He was found to have a pre-pyloric gastric carcinoma causing gastric outlet obstruction.

A CT scan showed no metastases.

What is the most appropriate management?

A best supportive care
B gastrojejunostomy
C palliative chemotherapy
D self-expanding stent
E venting gastrostomy

Question 24.

A 64-year-old man presented with haematemesis and melaena.

Investigations showed a c-kit positive gastrointestinal stromal tumour arising from the fundus of the stomach. A CT scan showed a 6-cm tumour, but no metastases.

What is the most appropriate management?

A downstaging with imatinib followed by appropriate surgery
B downstaging with imatinib followed by appropriate surgery, and a further 2 years of imatinib
C gastrectomy
D imatinib monotherapy
E single fraction radiotherapy followed by imatinib

Question 25.

A 1-year-old boy developed bilateral retinoblastomas. Following surgical treatment he was referred to his regional cancer genetics unit. His parents were very concerned that his 4-year-old sister would also develop this condition.

What is the mode of inheritance of mutations of the Rb gene?

A autosomal dominant
B autosomal recessive
C mitochondrial
D X-linked
E X-linked recessive

Question 26.

A 68-year-old woman was being given cetuximab as part of treatment for advanced colon cancer. She developed a maculopapular acneiform rash with inflammation and pustules. This involved her face, shoulders, upper limbs, chest and back. She had difficulty dressing as a result, but there was no pruritus and it was not tender to touch.

What is the most appropriate management?

A continue cetuximab and treat with topical antibiotics
B interrupt cetuximab and treat with emollient
C interrupt cetuximab and treat with systemic antibiotics
D interrupt cetuximab and treat with topical antibiotics
E permanently discontinue cetuximab

Answer keys:

1. E
2. D
3. D
4. C
5. B
6. B
7. E
8. C
9. D
10. D
11. D
12. A
13. B
14. B
15. C
16. A
17. A
18. E
19. B
20. A
21. B
22. B
23. D
24. C
25. A
26. C