A

Question Booklet Sl. No.

Series
A

CODE : KEM – 10/24

Write here Roll Number and Answer Sheet No.

Roll No.

Answer Sheet No.

Duration : 1 Hour — Total Marks : 100

Declaration by Invigilator :
I Certify that I have checked that the Roll Number and the Answer Sheet Number written by the Candidate on the question paper and the OMR Sheet are correct and the Answer Sheet Number matches the Question Booklet Number exactly.

Signature of the Invigilator with Name

Declaration by Candidate :
I undertake not to employ any unfair means in this exam. I have checked the Question Booklet Number and the Answer Sheet Number and both are identical and have been correctly entered by me wherever indicated.

Signature of the Candidate with Name

Read the following instructions carefully before you begin to answer the questions.

IMPORTANT INSTRUCTIONS TO CANDIDATES

1. The Roll No. is a **7** digit No., the candidate needs to circle the Roll No. in the Answer Sheet.
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3. Valuation of Answer Sheet will be done on the computer. Candidate should not make any stray marks on the Answer Sheet, tamper with or mutilate it. Otherwise it will not be evaluated.
4. Please check all the pages of the Booklet carefully. In case of any defect, please ask the Invigilator for replacement of the Booklet.
5. You must not tear off or remove any sheet from this Booklet. The Answer Sheet must be handed over to the Invigilator before you leave the Examination Hall.
6. All questions are compulsory and each Question carries **2.5** marks.
7. **There is no negative marking for incorrect answers.**
8. This Booklet contains 40 questions. Candidates must note that there will be 4 Sections in the question paper :

Sections	Test Components	No. of Questions	Page No.
A	General Awareness	1-10	5 – 6
B	General Intelligence and Reasoning Ability	11-20	7 – 8
C	Arithmetical Ability	21-30	9
D	Test of English Language and Comprehension	31-40	10 – 11

9. Use of Calculator/Palmtop/Laptop/Other Digital Instrument/Mobile/Cell Phone/Pager is **not** allowed.
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11. **No Rough Work is to be done on the Answer Sheet and only single OMR Answer Sheet will be provided.**
12. This booklet contains **12** pages.
13. **Directions** : Each question or incomplete statement is followed by four alternative suggested answers or completions. In each case, you are required to select the one that correctly answers the question or completes the statement and blacken (●) appropriate circle a, b, c or d by Black Ball-Point Pen provided by the Board against the question concerned in the Answer Sheet.
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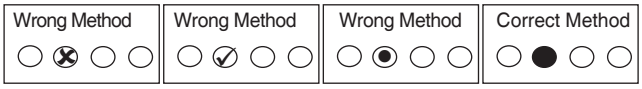

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A

DO NOT WRITE HERE

SPACE FOR ROUGH WORK

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SECTION – A
(General Awareness)

1. 'To every action, there is always an equal and opposite reaction'. This Law is called as

   (a) Newton's First Law of Motion
   (b) Newton's Third Law of Motion
   (c) Newton's Second Law of Motion
   (d) Aristotelian Law of Motion

2. Correctly match the following :

	Elements	Atomic Mass (u)
A.	Nitrogen	i. 23
B.	Oxygen	ii. 24
C.	Magnesium	iii. 14
D.	Sodium	iv. 16

	A	B	C	D
(a)	iii	iv	ii	i
(b)	ii	i	iv	iii
(c)	iii	i	iv	ii
(d)	iv	i	ii	iii

3. Lord Dalhousie annexed the kingdoms of Satara, Jhansi , Sambalpur, Udaipur and Nagpur on the basis of the Policy of

   (a) Administrative Failure
   (b) Doctrine of Lapse
   (c) Subsidiary Alliance
   (d) Dual Government

4. In 1957, this district of the then North East Frontier Tract (present Arunachal Pradesh) was transferred to Nagaland

   (a) Mon (b) Tuengsang (c) Peren (d) Tirap

5. Correctly match the following.

	Temples	Places
A.	Jagannath temple	i. Ellora
B.	Brihadiswara temple	ii. Konark
C.	Kailashnath temple	iii. Puri
D.	Sun temple	iv. Thanjavur

	A	B	C	D
(a)	iii	iv	ii	i
(b)	ii	i	iv	iii
(c)	iii	iv	i	ii
(d)	iv	i	ii	iii

6. Which of the following words were added to the Preamble of the Indian Constitution by the 42nd Constitutional Amendment Act ?
   (a) Socialist, Secular and Republic
   (b) Socialist, Secular and Democratic
   (c) Socialist, Secular and Integrity
   (d) Secular, Democratic and Republic

7. The market value of all the final goods and services produced in a country during a year is called as
   (a) Net National Product
   (b) Gross Domestic Product
   (c) National Income
   (d) Net National Income

8. Correctly match the following.

United Nation's Special Agency	**Headquarters**
A. FAO	i. Paris
B. WHO	ii. Rome
C. UNESCO	iii. Washington
D. IMF	iv. Geneva

	A	**B**	**C**	**D**
(a)	iii	iv	ii	i
(b)	ii	iv	i	iii
(c)	iii	iv	i	ii
(d)	iv	i	ii	iii

9. _____ suggested the name of the Union Territory as Arunachal Pradesh, the then Director of Research.
   (a) B. Das Shastri
   (b) P. K. Thungan
   (c) B. K. Nehru
   (d) None of the above

10. The host city of G20 2024 Summit
   (a) New Delhi
   (b) Capetown
   (c) Johansburg
   (d) Rio de Janeiro

SECTION – B
(General Intelligence and Reasoning Ability)

11. **Statement :** Industries destroys the natural resources.

Conclusions I : All natural resources are destroyed by industry.

II : No industries, no environmental pollution.

(a) Only I follows (b) Only II follows

(c) Both I and II follows (d) Neither I nor II follows

12. Find out the relationship between the first two words and choose the missing words from the given alternatives.

Sorrow : Misery : : ?

(a) Love : Obsession (b) Amity : Harmony

(c) Happiness : Joy (d) Enemy : Hatred

Direction (Q. No. 13 and 14) : Choose that alternatives as your answer which is similar to the given words.

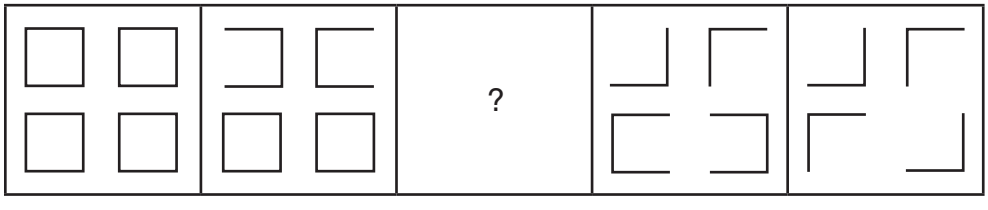
13. Lucknow, Mumbai, Kolkata

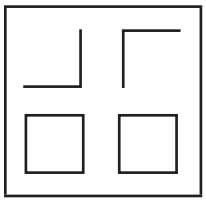
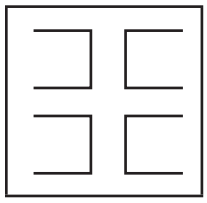
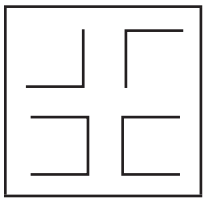
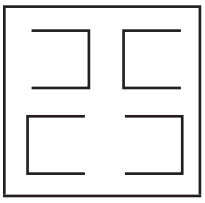
(a) Patna (b) Bikaner (c) Pune (d) Ludhiana

14. Iron, Copper, Zinc

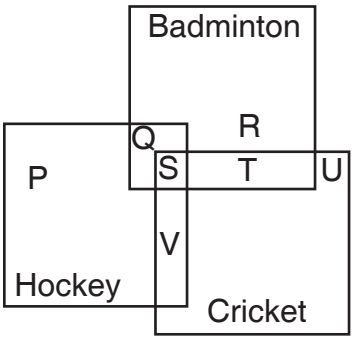
(a) Ceramic (b) Carbon (c) Silver (d) Coke

15. Choose the missing figure from the following alternatives to establish the correct figure series.



(a)  (b)  (c)  (d) 

16. The following diagram represents the people who play hockey, cricket and badminton. Observe the diagram and find out those people who play all the three games.



(a) T + U
(b) Q + R
(c) P + Q + R
(d) S

17. If A is B's sister, C is B's mother, D is C's father and E is D's mother, then how is A related to D ?

(a) Grand daughter
(b) Daughter
(c) Aunt
(d) Father

18. Two bus tickets from city A to B and three tickets from city A to C cost ₹ 77 but three tickets from city A to B and two tickets from city A to C cost ₹ 73. What are the fares for cities B and C from A respectively ?

(a) ₹ 4, ₹ 23
(b) ₹ 13, ₹ 17
(c) ₹ 15, ₹ 14
(d) ₹ 17, ₹ 13

19. If ' – ' stands for '÷', '+' stands for '×', '÷' stands for '–', '×' stands for '+', then which one of the following equation is correct ?

(a) $30 - 6 + 5 \times 4 \div 2 = 27$
(b) $30 + 6 - 5 \div 4 \times 2 = 30$
(c) $30 \times 6 \div 5 - 4 + 2 = 32$
(d) $30 \div 6 \times 5 + 4 - 2 = 40$

20. The smallest square number divisible by each one of the number 8, 9, 10 is

(a) 360
(b) 3600
(c) 3650
(d) 3700

SECTION – C
(Arithmetical Ability)

21. Ram is twice efficient as Sita and can finish a piece of work in 25 days less than Sita. The number of days Sita takes to finish the work is

(a) 45 days (b) 90 days (c) 25 days (d) 50 days

22. If volume of a cuboid is 275 cm^3 and base area is 25 cm^2, then its height is

(a) 15 cm (b) 25 cm (c) 5 cm (d) 11 cm

23. If a person walks at 14 km/hr instead of 10 km/hr, he would have walked 20 km more. The actual distance travelled by him is

(a) 50 km (b) 56 km (c) 70 km (d) 80 km

24. If $12 \times 15 + \frac{x}{2} = 50\% \text{ of } 400$, then the value of x is

(a) 20 (b) 40 (c) 80 (d) None of these

25. The value of 31.004 – 4.98 + 0.7034 + 0.3 – 2 is

(a) 25.006 (b) 26.0275 (c) 24.0274 (d) 25.0274

26. The value of $\frac{4}{7} \div \left(\frac{12}{7} - \frac{2}{14} \right)$ is

(a) $\frac{4}{11}$ (b) $\frac{11}{4}$ (c) $\frac{4}{14}$ (d) None of these

27. The HCF of 120 and 136 is

(a) 2040 (b) 16 (c) 8 (d) None of these

28. If two numbers are respectively 20% and 50% more than a third number, then the ratio of the two numbers is

(a) 2 : 5 (b) 3 : 5 (c) 4 : 5 (d) 6 : 7

29. If the cost price of 4 apples equals the selling price of 3 apples, then the profit percentage is

(a) $33\frac{1}{3}\%$ (b) 30% (c) 33% (d) $13\frac{1}{3}\%$

30. The difference between simple interest and compound interest on Rs. 18,000 invested for 4 years at 8% per annum

(a) Rs. 750 (b) Rs. 728.8 (c) Rs. 800 (d) Rs. 850

SECTION – D
(Test of English Language and Comprehension)

Direction (Q. No. 31 and 32) : Out of the four alternatives suggested, select the one which best expresses the same sentence in Indirect/Direct Speech.

31. The Professor told the class, "Ice floats on water".
    (a) The Professor told the class that, that ice floats on water.
    (b) The Professor told the class ice floats on water.
    (c) The Professor told the class that ice floats on water.
    (d) The Professor told the class how ice floats on water.

32. The boss said, "Please give me the latest reports".
    (a) The boss said to please give the latest reports.
    (b) The boss wanted to please the latest reports.
    (c) The boss wanted the latest reports, please.
    (d) The boss requested for the latest reports.

33. The following sentence has been split into four parts and the parts have been presented in a jumbled form. Choose the best order from among the four options (a), (b), (c) and (d) which produces the original sentence.

    When you
    P. which one is closest in meaning
    Q. read the four sentences in your text book and decide
    R. to the statement you have heard
    S. hear a statement

    (a) SRPQ (b) SQPR (c) SPQR (d) QPSR

34. Choose the appropriate article for the following sentence from the alternatives given below it.

    What kind of _____ man is he ?

    (a) a (b) an
    (c) the (d) none of these

35. Choose the correctly spelt word from the alternatives given below.

    (a) deliveri (b) delivry (c) delivary (d) delivery

Direction (Q. No. 36 and 37) : Choose the correct meaning of the following idioms or expressions from the alternatives given below them.

36. To be hand and glove with someone

(a) to be social (b) to be playful (c) to be annoyed (d) to be intimate

37. To fly in the ointment

(a) to clean a thing (b) to sterilise

(c) a problem in a situation (d) an unsuccessful attempt

38. In the following question, there are six sentences marked. S1, S6, P, Q, R, S. The positions of S1 and S6 are fixed. You are required to choose one of the four alternatives which would be the most logic sequence of the sentences in the passage.

S1 : Speech was the first means of conveying information.

P : Thirdly printing helped in dissemination of knowledge in a permanent form.

Q : Then writing as a means introduced a capacity for storing information.

R : Computer is the only medium that can not only store but analyse information to make decision.

S : However, all these are passive media.

S6 : Therefore, computer is hailed as the fourth information revolution.

The proper sequence should be

(a) PQSR (b) QPRS (c) QPSR (d) QRPS

Direction (Q. No. 39 and 40) : A part of the sentence is underlined in the following questions. Below are given alternatives to the underlined part at (a), (b) and (c) which may improve the sentence. Choose the correct alternative, in case no improvement is needed your answer is (d).

39. You are asked to copy this letter <u>word by word</u>.

(a) word for word (b) word with word

(c) word to word (d) No improvement

40. Neither Ted nor Johan <u>are going</u>.

(a) have been going (b) were going

(c) is going (d) No improvement

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Test Component	No. of Questions	Page No.
Paper – 3 : Road Safety and Traffic Signages	1-50	5 – 11

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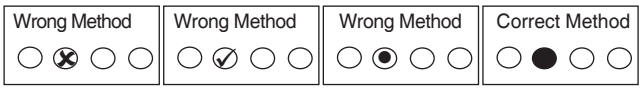

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SPACE FOR ROUGH WORK

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Paper – 3 : Road Safety and Traffic Signages

1. The give way lines are usually indicated by
   (a) Solid continuous lines
   (b) Double continuous lines
   (c) Single broken line
   (d) Double dotted lines marked diagonally

2. What is the purpose of border or edge lines ?
   (a) To mark the center of the road
   (b) To indicate no-parking areas
   (c) To mark the limits of the main carriageway
   (d) To indicate pedestrian crossings

3. Which behavior is considered as aggressive driving ?
   (a) Driving slowly in traffic
   (b) Allowing ample time to make the trip
   (c) Tailgating and jumping red lights
   (d) Using indicators to signal lane changes

4. Which shape is used for signs that provide information ?
   (a) Rectangle (b) Triangle
   (c) Circle (d) Diamond

5. What does the “No Entry” sign mean ?
   (a) Entry is allowed for all vehicles
   (b) Entry is allowed for bicycles only
   (c) Entry is prohibited for all vehicles
   (d) Entry is allowed for heavy vehicles only

6. Which of the following signs indicates a “School Ahead” ?
   (a) Shows two children crossing a road
   (b) A straight arrow pointing upwards
   (c) A person walking
   (d) A triangular sign with a steep ascent

7. What is another name for pedestrian crossings that have alternate black and white stripes ?
   (a) Zebra crossing (b) Speed bump
   (c) Signal crossing (d) Cat’s eye crossing

8. What should you do with your headlights while driving in fog ?
   (a) Turn them off
   (b) Keep them in high beam mode
   (c) Keep them in low beam mode
   (d) Use hazard lights instead

9. If your vehicle does not have fog lights, what should you use for better visibility in fog ?
   (a) Hazard lights
   (b) Headlights on high beam
   (c) Flashing headlights
   (d) Headlights on low beam

10. Why is night driving considered more dangerous ?
   (a) Because there are fewer vehicles on the road
   (b) Because vehicles move faster at night
   (c) Because road signs are hard to see
   (d) Because visibility is limited at night

11. Which of the following is recommended to ensure safer night driving ?
   (a) Using high beams in all conditions
   (b) Driving at high speeds
   (c) Making sure headlights, taillights and signals are operational
   (d) Stopping frequently on the roadway

12. What should pedestrians carry or wear at night to increase visibility ?
   (a) Dark-colored clothing
   (b) A red flag
   (c) Something white or light colored
   (d) None of the above

13. Where should pedestrians ideally cross the road ?
   (a) At any convenient spot
   (b) Between parked vehicles
   (c) At a zebra crossing or pedestrian overpass
   (d) In the middle of the road

14. If pumping the brake pedal and using the parking brake do not stop the car, what should you do next ?
   (a) Shift to low gear and look for a place to slow to a stop
   (b) Increase speed to gain control
   (c) Call for help immediately
   (d) Turn off the headlights

15. The “ON TOW” sign on a towed vehicle must have which of the following characteristics ?
    (a) White letters on a black background
    (b) Black letters on a white background
    (c) Red letters on a yellow background
    (d) Blue letters on a white background

16. The maximum speed limit for a vehicle towing another vehicle (that is not a trailer or side car) is
    (a) The same as the road’s posted speed limit
    (b) 24 kilometers per hour
    (c) 30 kilometers per hour in residential areas
    (d) 15 kilometers per hour in urban areas

17. When towing a vehicle, what should be the maximum allowable distance between the two vehicles ?
    (a) 3 meters (b) 4 meters
    (c) 6 meters (d) 5 meters

18. Who must be in the driver’s seat of the towed vehicle if it is not lifted off the road ?
    (a) Any passenger
    (b) A person with a valid license to drive that vehicle
    (c) A Police Officer
    (d) A mechanic

19. Which Form is required for a medical certificate of a transport vehicle driving license application ?
    (a) Form 1-A (b) Form 1
    (c) Form 2 (d) Form 3

20. Which of the following must be self-declared by applicants applying for a driving license of non-transport vehicles ?
    (a) Vehicle registration (b) Physical fitness
    (c) Insurance policy (d) Road tax receipt

21. What is the validity period of a learner’s license under the Motor Vehicles Act ?
    (a) 6 months (b) 1 month
    (c) 3 months (d) 1 year

22. Which Section of the Motor Vehicles Act mandates the wearing of protective head gear (helmets) for two-wheeler riders ?
    (a) Section 179 (b) Section 181
    (c) Section 184 (d) Section 129

23. According to Section 190(2) of the Motor Vehicles Act of 1988, what is the fine for the first offence of driving a vehicle that violates pollution standards ?
    (a) Rs. 1,000 (b) Rs. 500
    (c) Rs. 2,000 (d) Rs. 3,000

24. What type of certificate must a vehicle carry one year after its first registration ?
    (a) Fuel Efficiency Certificate
    (b) Pollution Under Control (PUC) Certificate
    (c) Vehicle Registration Certificate
    (d) None of the above

25. What is the chemical formula for carbon monoxide ?
    (a) CO (b) CO_2 (c) CH_4 (d) O_2

26. How should a load projecting from the back of the vehicle be marked at night ?
    (a) With a green lamp (b) With a white cloth
    (c) With a red lamp (d) With a blue flag

27. Where should pedestrians walk if there are no sidewalks ?
    (a) In the middle of the road
    (b) On the right side facing oncoming traffic
    (c) On the left side of the road
    (d) Next to the curb, regardless of the side

28. Who prescribes the particulars of the certificate to be recorded by the registering authority ?
    (a) Central Government (b) State Government
    (c) Local Government (d) Vehicle Manufacturer

29. What is the validity period for a certificate of registration for a motor vehicle, as specified ?
    (a) 5 years (b) 10 years
    (c) 20 years (d) 15 years

30. When is one eligible for a permanent driving license ?
    (a) After 6 months of holding a learner license
    (b) After passing a driving test
    (c) After one month of holding a learner license
    (d) After receiving a medical certificate

31. What is the minimum age requirement for applying for a driving license for non-commercial vehicles ?
    (a) 16 years
    (b) 21 years
    (c) 20 years
    (d) 18 years

32. Which Form is required to apply for a permanent license ?
    (a) Form No. 4
    (b) Form No. 1
    (c) Form No. 3
    (d) None of these

33. If an applicant fails the driving test, after how many days can they reappear ?
    (a) 3 days
    (b) 5 days
    (c) 10 days
    (d) 7 days

34. According to Section 157 of the Motor Vehicle Act, 1988 within how many days must a transferee apply for a transfer of the certificate of insurance after the transfer of the motor vehicle ?
    (a) 14 days
    (b) 7 days
    (c) 30 days
    (d) 45 days

35. Which type of vehicle is exempt from the provisions of sub-section (1) under Section 146 of the Motor Vehicle Act, 1988 ?
    (a) Vehicles owned by any private company
    (b) Vehicles used for commercial purposes by the Central or State Government
    (c) Vehicles owned by local authorities used for private transportation
    (d) Vehicles owned by the Central or State Government not used for commercial purposes

36. In first aid, the “ABC” rule stands for
    (a) Airway, Bleeding, Circulation
    (b) Alert, Balance, Check
    (c) Assist, Bandage, Comfort
    (d) Airway, Breathing, Circulation

37. Why is the “No Stopping or Standing” sign used in certain areas ?
    (a) To allow parking in the area
    (b) To maintain continuous traffic flow
    (c) To allow vehicles to slow down
    (d) To indicate a rest area

38. Which of the following is an effect of higher speed on a vehicle during a crash ?
    (a) Less impact on the passengers
    (b) Greater stopping ability
    (c) Greater impact and more severe injuries
    (d) Reduced risk of crash

39. Who has the authority to fix speed limits for motor vehicles ?
    (a) The Central Government
    (b) The State Government
    (c) Local Municipal Authorities
    (d) Both the Central and State Governments

40. Which of the following is a good practice to avoid drowsy driving ?
    (a) Drink more coffee
    (b) Take breaks as needed
    (c) Drive faster to reach your destination sooner
    (d) Use your phone to stay awake

41. What is the purpose of blue circular signs ?
    (a) To give warnings
    (b) To provide information
    (c) To give mandatory instructions
    (d) To indicate pedestrian areas

42. What should pedestrians avoid while crossing the road ?
    (a) Walking in a straight line
    (b) Running across quickly
    (c) Checking for traffic on both sides
    (d) Using an underpass

43. What is the first step you should take if your brakes suddenly fail ?
    (a) Turn off the engine
    (b) Pump the brake pedal rapidly several times
    (c) Pull over immediately
    (d) Shift to high gear

44. What type of tow ropes or chains should be used while towing a vehicle ?
    (a) Any rope or chain
    (b) Ropes or chains that are easily distinguishable by other road users
    (c) Thin ropes or chains for flexibility
    (d) Transparent ropes for safety

45. What is the minimum age limit for driving 50cc vehicle at public place ?
    (a) Up to 16 years
    (b) More than 21 years
    (c) More than 18 years
    (d) More than 16 years

46. What is a 'Don't' for pedestrians for crossing over a guard rail ?
    (a) Jump over guard rails to cross the road
    (b) Walk along the side of the road
    (c) Look both ways before crossing
    (d) Use pedestrian underpasses

47. What is the name of the software developed for driving license management ?
    (a) VAHAN
    (b) RTO
    (c) SMART
    (d) SARATHI

48. Why is over speeding particularly dangerous ?
    (a) It helps to reduce stopping distance
    (b) It reduces the risk of injuries
    (c) It increases the braking distance and risk of skidding
    (d) It improves vehicle control

49. According to Section 185 of Motor Vehicle Act, 1988 a person is considered to be driving under the influence of drugs if
    (a) They have alcohol in their blood exceeding 50 mg per 100 ml
    (b) They have alcohol in their blood exceeding 30 mg per 100 ml
    (c) They are found with any amount of alcohol in their blood
    (d) They are only suspected to be under the influence of drugs

50. What are the "4 Es" mentioned as the main focus areas for crash prevention and control worldwide ?
    (a) Education, Environment, Employment and Engineering
    (b) Education, Enforcement, Engineering and Environment
    (c) Engineering, Employment, Environment and Empowerment
    (d) Education, Employment, Engineering and Emergency

Question Booklet Sl. No.

Series
A

CODE : KEM – 10/24/01

Write here Roll Number and Answer Sheet No.

A

Roll No.

Answer Sheet No.

Duration : 1 Hour — Total Marks : 100

Declaration by Invigilator :
I Certify that I have checked that the Roll Number and the Answer Sheet Number written by the Candidate on the question paper and the OMR Sheet are correct and the Answer Sheet Number matches the Question Booklet Number exactly.

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Declaration by Candidate :
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Test Component	No. of Questions	Page No.
Paper – 1 : Assistant Technician/Field Publicity Assistant	1-50	5 – 11

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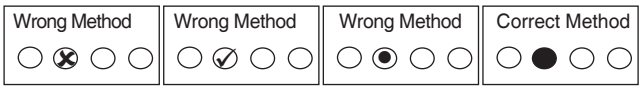

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A

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SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK

Paper – 1 : Assistant Technician/Field Publicity Assistant

1. What is the purpose of the  sign ?

   (a) To warn of a sudden widening of the road

   (b) To indicate the presence of a speed breaker

   (c) To show the location of a ferry crossing

   (d) To caution about a steep descent

2. What is indicated by the following sign ?



   (a) A restriction on the length of vehicles

   (b) Prohibition of vehicles exceeding a certain width

   (c) A restriction on the height of vehicles

   (d) Prohibition of vehicles based on their axle load

3. Which sign is used to indicate the end of all prohibitions for vehicle movement ?

   (a) Restriction End Sign

   (b) Stop Sign

   (c) Compulsory Ahead

   (d) Main Road Ahead

4. Following traffic sign indicates



(a) Cross-road
(b) Pedestrian crossing
(c) Railway crossing
(d) Narrow bridge

5. Which phenomenon is responsible for the deflection of a magnetic needle placed near a current-carrying conductor ?
(a) Heating effect
(b) Magnetic effect
(c) Chemical effect
(d) Optical effect

6. If the resistance in a circuit doubles while the voltage remains constant, what happens to the current ?
(a) It doubles
(b) It halves
(c) It remains the same
(d) It increases fourfold

7. Which application uses the chemical effect of electric current ?
(a) Electric heater
(b) Electroplating
(c) Electric fan
(d) Transformer

8. A 100 W bulb is used for 5 hours. How much energy is consumed ?
(a) 0.2 kWh (b) 0.5 kWh (c) 1 kWh (d) 2.5 kWh

9. Which type of joint is commonly used for joining two conductors in line ?
(a) Western Union Joint
(b) Britannia Joint
(c) Tap Joint
(d) Cross Joint

10. Which type of flux is recommended for electronic soldering ?
(a) Acid flux
(b) Rosin flux
(c) Zinc chloride flux
(d) Paste flux

11. The potential difference across any two ends of a conductor is directly proportional to the current flowing between the two ends provided the temperature of the conductor remains constant is known as
    (a) Archimedes' Principle
    (b) Ohm's Law
    (c) Kirchhoff's First Law
    (d) Kirchhoff's Second Law

12. In a simple series circuit with a 10-ohm and a 20-ohm resistor connected to a 30V battery, what is the total resistance of the circuit ?
    (a) 10 ohms (b) 15 ohms (c) 20 ohms (d) 30 ohms

13. What happens in a series circuit if one component is disconnected or broken ?
    (a) All components stop functioning
    (b) Other components continue to function
    (c) Current increases in the circuit
    (d) Resistance decreases

14. What is the effect of a short circuit in a parallel network ?
    (a) Total resistance becomes infinite
    (b) Total resistance becomes very low
    (c) Voltage across all components increases
    (d) No current flows through the circuit

15. Conductance is reciprocal of
    (a) Inductance
    (b) Semi conductance
    (c) Resistance
    (d) None

16. What happens to the electrical resistance of most metals with an increase in temperature ?
    (a) Decreases
    (b) Remains constant
    (c) Increases
    (d) Becomes zero

17. The direction of induced EMF in generators and alternators (Dynamically induced emf) is known by
    (a) Lenz's Law
    (b) Faraday's Law of Electromagnetic Induction
    (c) Fleming's Left Hand Rule
    (d) Fleming's Right Hand Rule

18. What is the nature of intermolecular forces ?
    (a) Gravitational (b) Electromagnetic
    (c) Nuclear (d) Weak

19. What is the main cause of low power factor in AC circuits ?
    (a) Resistive loads (b) Inductive loads
    (c) Capacitive loads (d) DC circuits

20. What happens to the total capacitance when capacitors are connected in series ?
    (a) It increases (b) It decreases
    (c) It remains the same (d) It doubles

21. What is the total phase difference between two adjacent phases in a three-phase system ?
    (a) 90° (b) 60° (c) 120° (d) 180°

22. What is the unit of apparent power ?
    (a) Watt (W) (b) Volt-Ampere (VA)
    (c) Volt-Ampere Reactive (VAR) (d) Joule

23. Which unit is used to measure the quantity of electricity in electrolysis ?
    (a) Volt (b) Ampere (c) Coulomb (d) Farad

24. Separators in battery is a _____ material.
    (a) Conductive (b) Non-conductive
    (c) Partly conductive (d) Heavy conductive

25. Which power represents the energy consumed in an AC circuit ?
    (a) Apparent power (b) Active power
    (c) Reactive power (d) Complex power

26. In an AC circuit, the apparent power is 500 VA, and the power factor is 0.8. What is the active power ?
    (a) 400 W (b) 600 W (c) 500 W (d) 250 W

27. If four 1.5 V cells are connected in series, what is the total voltage ?

(a) 1.5 V (b) 3 V (c) 4.5 V (d) 6 V

28. Which one of the following is used as energy convertor in optical materials ?

(a) Optic Fibre Cable (b) LED

(c) Laser (d) Solar Panel

29. Distribution board is used for dividing an electrical power feed into

(a) 2 paths (b) Subsidiary circuits

(c) Transformer (d) Switch

30. Which accessory is used to protect an electrical circuit from overcurrent or short circuits ?

(a) Switch (b) Fuse (c) Relay (d) ELCB

31. Which of the following is not a method of earthing and bonding ?

(a) Single point earthing (b) Single point earthing at mid point

(c) Cross bonding (d) Multiple point earthing

32. Which type of earthing is commonly used for electrical installations in domestic buildings ?

(a) Plate earthing (b) Pipe earthing

(c) Strip earthing (d) Rod earthing

33. Which type of resistor varies its resistance with temperature ?

(a) Fixed resistor (b) Variable resistor

(c) Thermistor (d) Potentiometer

34. Which type of resistor is commonly used to adjust voltage in electronic circuits ?

(a) Carbon film resistor (b) Wire wound resistor

(c) Potentiometer (d) Metal oxide resistor

35. A diode is classed as reverse biased
    (a) When both anode and cathode are positive
    (b) When both anode and cathode are negative
    (c) When anode is more positive than cathode
    (d) When anode is more negative than cathode

36. Under reverse bias condition, a PN junction diode
    (a) Conducts high current
    (b) Shows a decrease in depletion layer
    (c) Acts almost as an insulator
    (d) Has no potential barrier

37. What is the main characteristic of a half-wave rectifier ?
    (a) Rectifies both halves of the input AC wave
    (b) Rectifies only one half of the input AC wave
    (c) Converts DC to AC
    (d) Does not alter the input voltage

38. In half wave rectifiers, the number of diodes used as
    (a) One (b) Two (c) Three (d) Four

39. In an 8:1 multiplexer, number of select lines will be
    (a) 1 (b) 2 (c) 3 (d) 4

40. In these types of circuits, the output depends not only on the inputs, but also on the past history
    (a) Combinational (b) Sequential
    (c) Hierarchical (d) Parallel

41. Which of the following components can conduct current in both directions ?
    (a) SCR (b) DIAC (c) IGBT (d) Zener Diode

42. What is the primary use of a TRIAC in electrical circuits ?
(a) Voltage regulation (b) Rectification
(c) Controlling AC power (d) Amplification

43. Which modulation type is commonly used for commercial radio broadcasting ?
(a) AM (b) FM (c) PM (d) PCM

44. Which type of modulation is used for transmitting high-quality audio signals ?
(a) AM (b) FM (c) PM (d) PCM

45. What is the typical intermediate frequency (IF) used in AM radio receivers ?
(a) 455 kHz (b) 10.7 MHz (c) 1 MHz (d) 2.5 MHz

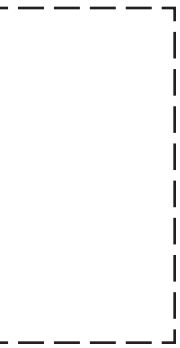
46. Which term refers to the range of frequencies that a signal occupies in radio transmission ?
(a) Modulation index (b) Bandwidth
(c) Frequency deviation (d) Carrier frequency

47. Which type of amplification is most commonly used in audio systems ?
(a) Voltage amplification (b) Power amplification
(c) Current amplification (d) Frequency amplification

48. Which type of amplifier class is most efficient for audio output stages ?
(a) Class A (b) Class B (c) Class AB (d) Class D

49. What is the relationship between wavelength (λ), frequency (f) and the speed of light (c) ?
(a) $\lambda = f/c$ (b) $c = f/\lambda$ (c) $\lambda = c/f$ (d) $f = c/\lambda^2$

50. What is the range of HF (High Frequency) in the electromagnetic spectrum ?
(a) 3 kHz to 30 kHz (b) 30 MHz to 300 MHz
(c) 3 MHz to 30 MHz (d) 300 MHz to 3 GHz



Question Booklet Sl. No.

Series
A

CODE : KEM – 10/24/02

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Test Component	No. of Questions	Page No.
Paper – 2 : Publicity Assistant	1-50	5 – 11

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Wrong Method	Wrong Method	Wrong Method	Correct Method
○ ⊗ ○ ○	○ ✓ ○ ○	○ ◉ ○ ○	○ ● ○ ○

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A

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SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK

Paper – 2 : Publicity Assistant

1. Below sign shows about



(a) Stop
(b) Give way
(c) Overtaking prohibited
(d) None of the above

2. What is the meaning of following traffic sign ?



(a) Stop
(b) No way
(c) One way
(d) Give way

3. Which sign is used to forewarn drivers about a change in direction that amounts to a reversal of direction ?
(a) Right/Left Hand Curve
(b) Right/Left Hair Pin Bend
(c) Right/Left Reverse Bend
(d) Narrow Road

4. What is the SI unit of electric charge ?
(a) Coulomb
(b) Joule
(c) Newton
(d) Farad

5. What property makes insulators different from conductors ?
(a) High resistance to the flow of current
(b) High density
(c) Low thermal conductivity
(d) Magnetic properties

6. Which of the following metals is the best conductor of electricity ?
(a) Silver
(b) Copper
(c) Aluminium
(d) Gold

7. Which type of flux is most suitable for electronic soldering ?
(a) Rosin flux
(b) Acid flux
(c) Water-based flux
(d) None of the above

8. According to Ohm's law, current flowing in a circuit is inversely proportional to
   (a) Voltage
   (b) Power
   (c) Resistance
   (d) All of the above

9. What does the 'T Intersection' sign indicate ?
   (a) A Y-intersection ahead
   (b) The presence of a dual carriageway
   (c) A T-junction where the nature of the intersection is not obvious
   (d) A crossing with a major road

10. Which device uses the magnetic effect of electric current ?
   (a) Electric heater
   (b) Electric motor
   (c) Bulb
   (d) Battery

11. In a series circuit with resistors of 5 ohms, 10 ohms and 15 ohms, which resistor will have the highest voltage drop if a constant current flows through the circuit ?
   (a) 5 ohms
   (b) 10 ohms
   (c) 15 ohms
   (d) All will have equal voltage drops

12. In a parallel circuit, the total resistance is always
   (a) Equal to the largest resistor
   (b) Equal to the smallest resistor
   (c) Less than the smallest resistor
   (d) Greater than the largest resistor

13. What does Kirchhoff's Voltage Law (KVL) state ?
   (a) The sum of currents in a network is zero
   (b) The sum of voltages around a closed loop is zero
   (c) The total voltage in a circuit is equal to the sum of resistances
   (d) The voltage in a closed circuit is directly proportional to the current

14. If the network contains at least one_____, it is an electric circuit.
   (a) Open path
   (b) Closed path
   (c) Resistor
   (d) None of the above

15. In a series circuit, what happens if there is a short circuit across one resistor ?
    (a) The total resistance decreases
    (b) The circuit becomes open
    (c) The total resistance increases
    (d) The current becomes zero

16. _____ measures the insulation resistance of a coil.
    (a) Ohm-meter
    (b) Volt meter
    (c) Megger
    (d) Shunt type ohm meter

17. What happens to the electrical resistance of most metals with an increase in temperature ?
    (a) Decreases
    (b) Remains constant
    (c) Increases
    (d) Becomes zero

18. What happens when a P-N junction diode is forward-biased ?
    (a) The depletion region widens and no current flows
    (b) The depletion region narrows and current flows
    (c) The diode blocks current flow completely
    (d) The diode generates a constant voltage

19. Which of the following resistors is classified as a variable resistor ?
    (a) Fixed carbon resistor
    (b) Wire-wound resistor
    (c) Potentiometer
    (d) Metal film resistor

20. What happens to the resistance of a wire if its length is doubled and its cross-sectional area remains constant ?
    (a) It doubles
    (b) It halves
    (c) It remains the same
    (d) It quadruples

21. In an electro magnet, when current is switched off, the Iron bar
    (a) Holds its magnetism
    (b) Gains voltage
    (c) Losses its magnetism
    (d) Gains current

22. What is the term used to describe the ability of a material to retain magnetism after the removal of the magnetizing force ?
(a) Retentivity
(b) Permeability
(c) Coercivity
(d) Hysteresis

23. What happens to the total capacitance when capacitors are connected in parallel ?
(a) It decreases
(b) It increases
(c) It remains the same
(d) It depends on the voltage applied

24. Which of the following is a common application of capacitors ?
(a) Timing circuits
(b) Noise filtering
(c) Energy storage in flash devices
(d) All of the above

25. What is the power factor in an AC circuit ?
(a) The ratio of actual power to apparent power
(b) The product of current and voltage
(c) The ratio of voltage to current
(d) The difference between actual and apparent power

26. What is the RMS value of an alternating current ?
(a) The peak value of the current
(b) The average value of the current
(c) The value of direct current producing the same heating effect
(d) The maximum effective value of the current

27. What is the primary application of a Shunt DC motor ?
(a) Electric locomotives
(b) Centrifugal pumps
(c) Elevators
(d) Cranes and hoists

28. What is the significance of back EMF in a DC motor ?
(a) It helps in increasing the speed of the motor
(b) It is responsible for the motor's torque generation
(c) It regulates the flow of current through the armature
(d) It converts mechanical energy into electrical energy

29. The battery used in electric vehicles and aerospace applications is
(a) Lead acid cell battery
(b) Lithium-ion battery
(c) UPS battery
(d) Charger battery

30. According to Faraday's first law of electrolysis, the amount of substance deposited during electrolysis is proportional to
(a) Current and resistance
(b) Voltage and time
(c) Current and time
(d) Voltage and resistance

31. Which of the following is a primary cell ?
(a) Lead-acid cell
(b) Nickel-cadmium cell
(c) Dry cell
(d) Lithium-ion cell

32. Which type of cell is commonly used in cars for starting engines ?
(a) Dry cell
(b) Lead-acid cell
(c) Alkaline cell
(d) Zinc-carbon cell

33. Open wiring is also known as _____ wiring.
(a) Casing-capping
(b) Conduit wiring
(c) Concealed wiring
(d) Closed wiring

34. Concealed wiring is safe from
(a) Humidity
(b) Heat
(c) Light
(d) Electricity

35. A two-way switch is used for
(a) Control one bulb from 2 points
(b) Control two bulbs from 2 points
(c) Control multiple bulbs from 2 points
(d) Control one bulb from one point

36. Distribution board is used for dividing an electrical power feed into
(a) 2 paths
(b) Subsidiary circuits
(c) Transformer
(d) Switch

37. Which type of resistor is designed to vary its resistance with temperature ?
(a) Fixed Resistor
(b) Thermistor
(c) Varistor
(d) Photoresistor

38. Which resistor type is non-linear and protects circuits from voltage spikes ?
(a) Thermistor
(b) Photoresistor
(c) Varistor
(d) Fixed Resistor

39. Which of the following is a passive component ?
(a) Transistor
(b) Diode
(c) Resistor
(d) Operational Amplifier

40. Which configuration of a transistor provides the highest current gain ?
(a) Common Base (CB)
(b) Common Emitter (CE)
(c) Common Collector (CC)
(d) Emitter Follower

41. Which type of diode is specifically designed to operate in the reverse-biased breakdown region ?
(a) Zener diode
(b) LED
(c) Tunnel diode
(d) Schottky diode

42. What is the typical forward voltage drop across a silicon P-N junction diode ?
(a) 0.3 V
(b) 0.7 V
(c) 1.2 V
(d) 2.0 V

43. Which diode is widely used for light emission in optoelectronic devices ?
(a) Zener diode
(b) Photodiode
(c) LED
(d) Schottky diode

44. In half wave rectifiers, the number of diodes used as
(a) One
(b) Two
(c) Three
(d) Four

45. Which type of rectifier provides the highest efficiency in converting AC to DC ?

(a) Half-wave rectifier
(b) Full-wave rectifier
(c) Bridge rectifier
(d) None of the above

46. In a full-wave rectifier, how many diodes are used in the center-tap configuration ?

(a) 1
(b) 2
(c) 3
(d) 4

47. In an NPN transistor, what happens when the base-emitter junction is forward-biased and the base-collector junction is reverse-biased ?

(a) The transistor is in saturation
(b) The transistor is in cut-off
(c) The transistor is in active mode
(d) The transistor is in reverse breakdown

48. Which component in an oscilloscope is responsible for deflecting the electron beam vertically ?

(a) Horizontal deflection plates
(b) Vertical deflection plates
(c) Cathode Ray Tube (CRT)
(d) Time base generator

49. What is the function of the gate terminal in an SCR ?

(a) To supply power to the load
(b) To trigger the SCR into conduction
(c) To stop the flow of current
(d) To reverse the voltage polarity

50. How does a DIAC differ from an SCR ?

(a) A DIAC conducts in both directions, while an SCR conducts in one direction only.
(b) A DIAC has a gate terminal, while an SCR does not.
(c) A DIAC is used for rectification, while an SCR is not.
(d) A DIAC works only in reverse bias.

A

Question Booklet Sl. No.

Series
A

CODE : KEM – 10/24/04

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Roll No.

Answer Sheet No.

Duration : 1 Hour

Total Marks : 100

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Test Component	No. of Questions	Page No.
Paper – 4 : Library and Information Science	1-50	5 – 11

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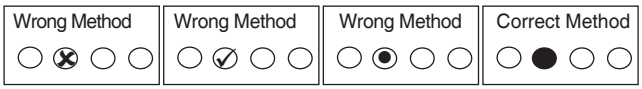

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A

DO NOT WRITE HERE

SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK

Paper – 4 : Library and Information Science

1. In Library Science third law is
   (a) Every reader his book
   (b) Every reader her book
   (c) Every book its reader
   (d) Library should have all books

2. _____ can save the subjective time of the reader.
   (a) Open Access
   (b) Closed Access
   (c) Accession Register
   (d) Statistics

3. Indian Library Association was established in
   (a) 1923
   (b) 1933
   (c) 1876
   (d) 1931

4. The following organization _____ is associated with special library.
   (a) FID
   (b) IFLA
   (c) RRRLF
   (d) ASLIB

5. The National Library of India is situated in
   (a) Madras
   (b) Bombay
   (c) Delhi
   (d) Calcutta

6. The following Act was passed in the year 1867.
   (a) The Delivery of Books and Newspaper (Public Libraries Act) Act
   (b) The National Library of India Act
   (c) Press and Registration of Books Act
   (d) None of the above

7. Which of the following is not a species of Classification ?
   (a) Freely faceted scheme
   (b) Fully and non-rigid faceted scheme
   (c) Purely enumerative scheme
   (d) Almost enumerative scheme

8. _____ is described as “Knowledge concerning some particular fact, subject, data and event in any communicable form”.
   (a) Data
   (b) Information
   (c) Knowledge
   (d) All of the above

9. The quality of _____ determines the level of development as well as the quality of our societies.
   (a) Information flow (b) Knowledge achieved
   (c) Financial growth (d) None of the above

10. _____ is a process through which information is conveyed or disseminated among the members of society through a common system of symbols.
   (a) Communication (b) Translation
   (c) Interpretation (d) None of the above

11. The word classification comes from the following Latin word
   (a) Classes (b) Classis
   (c) Classifies (d) Class

12. According to Ranganathan, there are five and only five fundamental categories: viz. Time, Space, Energy, Matter and
   (a) Personality (b) Profession
   (c) Main Class (d) Facet

13. Identify the device that is used to specify new foci by means of their dates of origin.
   (a) Geographical Device (b) Chronological Device
   (c) Subject Device (d) Enumeration Device

14. Which of the following is not a quality of Notation ?
   (a) Brevity (b) Simplicity
   (c) Authenticity (d) Mnemonics

15. Which of the following is not a part of the call number ?
   (a) Class Number (b) Shelf Number
   (c) Book Number (d) Collection Number

16. Universe of knowledge is divided into _____ main classes in DDC.
   (a) 8 (b) 9
   (c) 10 (d) 11

17. The following Classification Scheme was initiated by Henri La Fontaine and Paul Otlet
    (a) Colon Classification
    (b) Bibliographic Classification
    (c) Universal Decimal Classification
    (d) Library of Congress Classification

18. The objectives of library catalogue were broadly described by _____ in 1876.
    (a) S. R. Ranganathan
    (b) Charles Ammi Cutter
    (c) Seymour Lubetzsky
    (d) Margaret Mann

19. _____ form of catalogue is the most accepted one in use.
    (a) Card form
    (b) Book form
    (c) Register form
    (d) Sheaf form

20. A dictionary catalogue consists of
    (a) Main Entry
    (b) Cross References
    (c) Added Entry
    (d) All of the above

21. _____ is most widely used catalogue code.
    (a) CCC
    (b) AACR2
    (c) RDA
    (d) None of the above

22. _____ is a name assumed by an author to conceal or obscure his identity.
    (a) Corporate name
    (b) Personal name
    (c) Pseudonym
    (d) Surname

23. While preparing the main entry for a western name, the personal name usually is the name _____ followed by a surname.
    (a) Of Caste to which he belongs
    (b) Of Place of birth
    (c) Given at the time of birth
    (d) Of his father

24. The purpose of subject catalogue is
    (a) To find a book of which subject is known and to show what the library has on a given subject
    (b) To find a book of which author is known and to show how many books of that author is available
    (c) To find a book of which title is known
    (d) To find a book of which accession number is known

25. The Library of Congress Subject Heading began publishing its subject headings in the year
    (a) 1933 (b) 1909
    (c) 1920 (d) 1926

26. ISBD stands for
    (a) Internation Serial Bibliographic Description
    (b) Indian Standard Bibliographic Description
    (c) Indian Serial Bibliographic Description
    (d) International Standard Bibliographic Description

27. _____ is a machine-readable form of catalogue.
    (a) AACR2 (b) CCC
    (c) Magnetic Tape (d) Card form

28. The following standards are used to specify library furniture
    (a) ASCE (b) ASME
    (c) Indian Standard (d) ASTM

29. Reference service is more concerned with provision of information
    (a) On demand (b) In anticipation
    (c) After confirmation (d) None of the above

30. Sources of Information can be from one of the following
    (a) Present Experience (b) Personal interviews
    (c) Observations (d) All of the above

31. Glossary means

(a) A list of words with some explanation

(b) A treasury of words

(c) A list of alternative terms

(d) A dictionary of some foreign languages

32. Patents are regarded as a part of the

(a) Tertiary source (b) Secondary source

(c) Primary sources (d) None of the above

33. Marketing has four P's mix

(a) Product, Price, Place and Promotion

(b) Product, Placement, Productivity and Price

(c) Product, Price, Promotion and Publicity

(d) Product, Place, Placement and Publicity

34. There is a need to study the user because

(a) Users attitudes are essential to design the library services

(b) Users know better than designer

(c) Users attend many workshops and conferences

(d) None of the above

35. Following is a type of Active Documentation

(a) Service on demand

(b) Data entry service

(c) Anticipatory documentation service

(d) Bibliographic service

36. Users can be categorised under _____broad classes.

(a) 5 (b) 4

(c) 3 (d) 2

37. All librarians in their role as librarians are managers rather than
(a) philanthropists (b) educationists
(c) administrators (d) psychologists

38. _____ was the first to put forward a list of general administrative principles.
(a) Chester I Barnard (b) Frederick Winslow Taylor
(c) Henry Fayol (d) Lyndall Urwick

39. While determining the library finance, a minimum amount per head of population is fixed in the following method.
(a) Per Capita method (b) Proportional method
(c) Method of details (d) Browne's method

40. The following is a voluntary organisation which decides the rates of conversion for the supply of books and periodicals to libraries.
(a) Good Offices Committee
(b) Vendors Committee
(c) Indian Library Association
(d) National Library of India

41. The process of restoring order among the books is called
(a) Classification (b) Cataloguing
(c) Accessioning (d) Shelf Rectification

42. The following document can be invaluable for a new library staff member
(a) Accession Register (b) Classification Scheme
(c) Library Statistics (d) Staff Manual

43. UNIX one of example of
(a) Application Software (b) System Software
(c) Application Programs (d) User Application Software

44. APPLE series of Personal Computers belong to which generation of computers ?
(a) 2nd Generation (b) 3rd Generation
(c) 4th Generation (d) 5th Generation

45. _____ is the gateway to the bibliographic information in libraries.

(a) Library Portal
(b) Search Engines
(c) OPAC
(d) Institution Web page

46. One of the elements of Dublin Core : "The entity responsible for making the resource available in its present form" is

(a) Creator
(b) Contributor
(c) Publisher
(d) Identifier

47. Key success factors for maintenance of the database include

(a) Determination of updates and compression intervals
(b) Allocation of responsibilities within the organization
(c) Determination of the number of database generations for recovery purposes
(d) All of the above

48. It is a window version of CDS/ISIS

(a) LIBSYS
(b) WINISIS
(c) WILISYS
(d) EASYLIB

49. Technically, the web is based on the following technique(s)

(a) HTML and HTTP
(b) MIME
(c) URL
(d) All of the above

50. _____ is sometimes called an "Information Highway".

(a) Search Engine
(b) Social Media
(c) Internet
(d) Intranet

Question Booklet Sl. No.

Series
A

CODE : KEM – 10/24/05

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A

Roll No.

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Test Component	No. of Questions	Page No.
Paper – 5 : Health Assistant	1-50	5 -11

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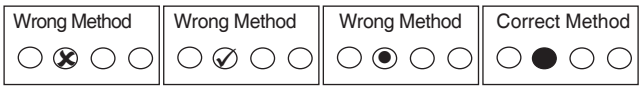

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Paper – 5 : Health Assistant

1. Which of the following is considered the oldest communicable disease control measure ?
   (a) Surgery
   (b) Medication
   (c) Isolation
   (d) Contact tracing

2. The limitation of freedom of movement for individuals or animals exposed to a communicable disease is known as
   (a) Providing medicine
   (b) Contact tracing
   (c) Vaccination
   (d) Quarantine

3. Why is emergency obstetric care considered an important intervention during pregnancy ?
   (a) To reduce the cost of healthcare for pregnant women
   (b) To predict all complications in advance
   (c) To prevent maternal morbidity and mortality due to unpredictable complications
   (d) To ensure that all pregnancies are high-risk

4. What does the abbreviation ECP stands for in the context of family planning ?
   (a) Early Contraceptive Program
   (b) Emergency Contraceptive Pills
   (c) Extended Contraceptive Plan
   (d) Essential Contraceptive Plan

5. _____ is plane away from the median plane.
   (a) Lateral
   (b) Medial
   (c) Proximal
   (d) Distal

6. _____ is when two flexor surfaces are brought close to each other.
   (a) Flexion
   (b) Extension
   (c) Rotation
   (d) Abduction

7. _____ is when the palm is facing forwards or upwards, as in putting food in the mouth.
   (a) Supination
   (b) Pronation
   (c) Abduction
   (d) Adduction

8. _____ is the elongated shaft of a long bone which ossifies from a primary centre.
   (a) Metaphysis (b) Diaphysis
   (c) Epiphysis (d) None of the above

9. When two bones articulate is called as
   (a) Simple joint (b) Complex joint
   (c) Compound joint (d) Fibrous joint

10. _____ that returns venous blood from the head, neck and upper limbs.
   (a) Superior vena cava (b) Inferior vena cava
   (c) Interventricular septum (d) Posterior vena cava

11. Right and left atria are separated from one another by a fibrous septum called
   (a) Interventricular septum (b) Interatrial septum
   (c) Interpulse septum (d) Internodal septum

12. _____ is the middle layer of wall of the heart and it is formed by cardiac muscle fibers or cardiac myocytes.
   (a) Pericardium (b) Endocardium
   (c) Lipocardium (d) Myocardium

13. _____ is formed by manubrium sterni and the first pair of ribs.
   (a) Upper costal series (b) Thoracic lid
   (c) Lower costal series (d) Diaphragm

14. Cerebrospinal fluid is an example for _____fluid.
   (a) Intracellular fluid (b) Extracellular fluid
   (c) Transcellular fluid (d) Intrapleural fluid

15. Specific gravity of total blood is
   (a) 1.030 to 1.040 (b) 1.041 to 1.050
   (c) 1.052 to 1.061 (d) 1.062 to 1.070

16. Functions of blood includes

(a) Nutritive function
(b) Respiratory function
(c) Excretory function
(d) All of the above

17. Molecular weight of Fibrinogen is

(a) 1,00,000
(b) 2,00,000
(c) 3,00,000
(d) 4,00,000

18. _____ includes physiological and biochemical effects of drugs and their mechanism of action at organ system / subcellular / macromolecular levels.

(a) Pharmacokinetics
(b) Pharmacodynamics
(c) Pharmacotherapeutics
(d) None of the above

19. Hepatitis B virus is

(a) DNA virus
(b) RNA virus
(c) Both (a) and (b)
(d) None of the above

20. Which antigen in hepatitis is first to be appear in blood after infection ?

(a) HBs Ag
(b) HBc Ag
(c) HBe Ag
(d) HBd Ag

21. _____ is an excellent way to remove the microbial population in solutions of heat-labile materials like vaccine, antibiotics, toxin, serum and sugar solution as well as for purification of air.

(a) Radiation
(b) Filtration
(c) Heat
(d) Sunlight

22. _____ means any waste, which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining there to or in the production or testing of biologicals.

(a) Biomedical waste
(b) House waste
(c) Industrial waste
(d) Road waste

23. _____ is the component of hospital waste that produces maximum hazards.

(a) General waste

(b) Pathological and infectious waste

(c) Chemical and pharmaceutical waste

(d) Sharp waste

24. _____ is a high temperature dry oxidation process that reduces organic and combustible waste into non-organic incombustible matter, resulting in a very significant reduction of waste volume and weight.

(a) Autoclave (b) Incineration

(c) Inspissation (d) Hot air oven

25. Waste sharps belongs to which Category ?

(a) Category No. 1 (b) Category No. 2

(c) Category No. 3 (d) Category No. 4

26. The common Hospital Acquired Infections encountered is/are

(a) Urinary tract infections (b) Pneumonia

(c) Surgical site infections (d) All of the above

27. _____ is a process by which all living microorganisms, including viable spores, are either destroyed or removed from an article, body surface or medium.

(a) Sterilization (b) Disinfection

(c) Bacteriostatic agents (d) None of the above

28. Sterilization control use in hot air oven is

(a) Spores of nontoxigenic strains of *Clostridium tetani*

(b) Spores of nontoxigenic strains of *E.coli*

(c) Spores of nontoxigenic strains of *Salmonella*

(d) Spores of nontoxigenic strains of *Shigella*

29. Example for Moist Heat at a temperature above 100°C is
    (a) Autoclave
    (b) Inspissation
    (c) Pasteurization
    (d) Incubator

30. Biological control used in autoclave is
    (a) Spores of *Clostridium tetani*
    (b) Spores of *Escherechia coli*
    (c) Spores of Proteus
    (d) Spores of Geobacillus stearothermophilus

31. Advantages of ionizing radiation is
    (a) High penetrating power
    (b) Low penetrating power
    (c) Temperature is raised
    (d) All of the above

32. Formaldehyde is used for
    (a) Preservation of anatomical specimen
    (b) Fumigation of closed areas, such as operation theatres
    (c) Preparation of toxoid from toxin
    (d) All of the above

33. For municipal water supplies and swimming pool which disinfectant is used ?
    (a) Iodine
    (b) Formaldehyde
    (c) Glutaraldehyde
    (d) Chlorine

34. If haematocritrises and the patient shows no improvement (unstable vital signs), which action is most appropriate ?
    (a) Continue the same IV crystalloid infusion
    (b) Discontinue IV therapy and monitor vital signs
    (c) Initiate blood transfusion
    (d) Increase IV therapy with colloids like Dextran

35. Risk factors for drowning include
    (a) Alcohol and drug use
    (b) Medical conditions
    (c) Infants left unsupervised
    (d) All of the above

36. The anterior abdominal wall, including the vulva, vagina and perineal areas are lined with which type of epithelium ?
(a) Columnar epithelium
(b) Cuboidal epithelium
(c) Squamous epithelium
(d) Transitional epithelium

37. During normal pregnancy, urinary calcium excretion is
(a) Two to threefold lower
(b) Two to threefold higher
(c) Four to fivefold higher
(d) Unchanged

38. _____ labour is the major cause of neonatal death in multiple pregnancy.
(a) Preterm
(b) Prolonged
(c) Induced
(d) Post-term

39. Obstetric haemorrhage is one of the most common causes of
(a) Neonatal morbidity
(b) Major maternal morbidity and mortality
(c) Fetal distress
(d) Preterm birth

40. Placental abruption may lead to the onset of
(a) Post-term labour
(b) Preterm labour
(c) Ectopic pregnancy
(d) Gestational diabetes

41. Airway management requires
(a) Basic knowledge of patient care
(b) High-level expertise to ensure a safe airway
(c) Minimal training and preparation
(d) Less use of mechanical devices

42. In the management of hypovolemic shock, resuscitative fluids are used to
(a) Replace existing fluid deficits and ongoing abnormal fluid losses
(b) Prevent fluid overload in the body
(c) Maintain normal electrolyte balance only
(d) Reduce the risk of fluid retention

43. Closed head injury may be classified by
(a) Morphology
(b) Severity
(c) Mechanism of injury
(d) All of the above

44. The immediate goal in the management of head-injured patients is the prevention of secondary brain damage by rapid correction of
    (a) Hypoxemia
    (b) Hypotension
    (c) Hypercarbia and hypoglycemia
    (d) All of the above

45. What can intra-abdominal hypertension and abdominal compartment syndrome lead to ?
    (a) Enhanced intestinal motility
    (b) Intestinal mucosal hyperperfusion
    (c) Decreased abdominal wall tension
    (d) All of the above

46. Which of the following is the most frequently injured hollow viscus in both blunt and penetrating abdominal trauma ?
    (a) Stomach
    (b) Large intestine
    (c) Small bowel
    (d) Gallbladder

47. Blunt abdominal trauma can be caused by
    (a) Only direct contusion to the abdomen
    (b) Penetrating objects
    (c) Internal bleeding from organ rupture
    (d) Deceleration injury or falls, in addition to direct contusion

48. The abdomen includes
    (a) The cranial cavity
    (b) The pelvis, retroperitoneum and peritoneal cavity
    (c) The upper and lower limbs
    (d) The chest cavity organs

49. The oropharyngeal airway should be restricted to
    (a) All patients in the hospital
    (b) Awake patients who need airway support
    (c) Obtunded patients, as it is not tolerated by awake patients
    (d) Patients with a history of obstructive sleep apnea

50. Arterial lines are used for
    (a) Non-invasive monitoring of blood pressure
    (b) Cannulation of a vein for blood pressure monitoring
    (c) Invasive monitoring of blood pressure with real-time assessment
    (d) Monitoring only systolic blood pressure

Question Booklet Sl. No.

Series
A

CODE : KEM – 10/24/06

Write here Roll Number and Answer Sheet No.

A

Roll No.

Answer Sheet No.

Duration : 1 Hour — Total Marks : 100

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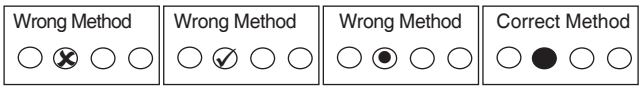

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A

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SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK

Paper – 6 : Dental Technician

1. _____ is a measure of the hotness or coldness of an object.
   (a) Mass
   (b) Temperature
   (c) Density
   (d) Pressure

2. Mass density (D_m) is defined as
   (a) Mass per unit length
   (b) Volume per unit mass
   (c) Weight per unit volume
   (d) Mass per unit volume

3. Matter is defined as anything that
   (a) Occupies only space
   (b) Can be seen and touched
   (c) Occupies space and has mass
   (d) Solid and gas

4. Which of the following correctly defines an element ?
   (a) A substance that can be separated into simpler substances.
   (b) A substance that cannot be separated into simpler substances.
   (c) A mixture of two or more compounds.
   (d) A substance that exists only in the gaseous state.

5. What is a molecule ?
   (a) The smallest particle of an element or compound that can exist in a free state and retain its characteristics
   (b) The smallest particle of an element that cannot exist independently
   (c) A group of atoms that always form a compound
   (d) The smallest unit of matter that has no definite properties

6. Heat is a form of energy that
   (a) Exists only as potential energy within an object
   (b) Can only be stored within an object without transferring to another
   (c) Moves from an object at a lower temperature to one at a higher temperature
   (d) Is associated with the motion of atoms or molecules and can transfer from an object at higher temperature to one at lower temperature

7. Force is defined as
   (a) Any action that changes or tends to change the mass of a body
   (b) The amount of energy exerted by an object
   (c) Any action that decreases the velocity of an object
   (d) Any action that changes or tends to change the state of rest or of uniform motion of a body

8. _____ is a force of restriction of movement or motion of a body when it slides over another body.
   (a) Tension (b) Gravity (c) Friction (d) Inertia

9. The Parallelogram Law is applicable to determine the resultant when the number of forces acting in a coplanar concurrent force system is
   (a) Two (b) Three (c) Four (d) Five

10. _____ is defined as the rate of doing work.
   (a) Power (b) Energy
   (c) Force (d) All of the above

11. Why are most elements not found in their pure form in nature ?
   (a) They are stable in their elemental form
   (b) They readily form compounds
   (c) They are rare in the Earth's crust
   (d) They exist only in artificial conditions

12. What type of mixture is air ?
   (a) Compound (b) Pure substance
   (c) Heterogeneous mixture (d) Homogeneous mixture

13. Most elements can interact with other elements to form
   (a) Mixtures (b) Compounds
   (c) Solutions (d) Molecules

14. The _____ of iron is spontaneous and is accompanied by a decrease in the entropy of the system (the iron and oxygen).
   (a) Melting (b) Burning
   (c) Boiling (d) Rusting

15. The process in which dissolved solute particles collide with the surface of the solid and reattach is called
    (a) Precipitation
    (b) Dissolution
    (c) Crystallization
    (d) Evaporation

16. Compounds in which two hydrocarbon groups are bonded to one oxygen are called
    (a) Alcohols
    (b) Ethers
    (c) Ketones
    (d) Esters

17. Human dentition is classified into primary and permanent dentition based on
    (a) Tooth color
    (b) Tooth shape
    (c) Eruption sequence and time
    (d) Tooth size

18. _____ is the term used to describe all the teeth present in the upper and lower jaw bones.
    (a) Dentition
    (b) Mandible
    (c) Maxilla
    (d) Occlusion

19. _____ is the way in which the maxillary and mandibular teeth articulate.
    (a) Dentition
    (b) Mastication
    (c) Alignment
    (d) Occlusion

20. What does TMJ stand for in dental terminology ?
    (a) Temporomandibular Joint
    (b) Transverse Mandibular Joint
    (c) Temporal Molar Joint
    (d) Tongue Mucosal Junction

21. Concern over possible cross-contamination in the dental office is primarily due to the transmission of which viruses through dental impressions ?
    (a) Hepatitis-B Virus (HBV)
    (b) Human Immunodeficiency Virus (HIV)
    (c) Tuberculosis
    (d) Both (a) and (b)

22. A refractory cast is a special cast made from
    (a) Dental stone
    (b) Alginate
    (c) Heat-resistant (investment) material
    (d) Modeling wax

23. Identify the common requirements for cast metals in dentistry.
    (a) They must not tarnish and corrode in the mouth.
    (b) They must be sufficiently strong for the intended purpose.
    (c) They must be biocompatible (non-toxic and non-allergic).
    (d) All of the above

24. An accurate impression of the tooth/teeth is typically made using
    (a) Hydrocolloids
    (b) Elastomers
    (c) Zinc oxide eugenol
    (d) All of the above

25. Which type of tray is used in the single mix impression technique ?
    (a) Resin custom tray with 2-4 mm spacing
    (b) Stock tray with wax spacer
    (c) Metal perforated tray
    (d) Disposable paper tray

26. The tray typically used in the reline technique (two-stage putty-wash technique) is
    (a) Resin custom tray with 2-4 mm spacing
    (b) Perforated stock tray
    (c) Metal custom tray
    (d) Disposable paper tray

27. Example of temporary Denture Base Materials include
    (a) Self cure acrylics
    (b) Shellac base plate
    (c) Base plate wax
    (d) All of the above

28. Example of Non-Metallic Denture Base Materials include
    (a) Acrylic resins
    (b) Cobalt chromium
    (c) Gold alloys
    (d) Aluminium

29. _____ have to flex when inserted or removed from the mouth.
(a) Clasps (b) Crowns
(c) Bridges (d) Rest seats

30. The metal frame of a metal-ceramic bridge should have a _____ stiffness.
(a) Low (b) Moderate
(c) High (d) Variable

31. A metal that can be drawn readily into a wire is said to be
(a) Malleable (b) Ductile
(c) Brittle (d) Tough

32. Which of the following is another term for secondary bonds ?
(a) Hydrogen bonds (b) Covalent bonds
(c) Ionic bonds (d) Van der Waals forces

33. The adhesion of acrylic to metal and porcelain is typically poor, so _____ is required.
(a) Chemical bonding (b) Mechanical retention
(c) Heat treatment (d) Electrical bonding

34. Due to the soft tissue changes that occur during wearing of the denture, it is often necessary to change the tissue surface of the denture. This process is known as
(a) Replicating (b) Rebasing or relining
(c) Restoring (d) Polishing

35. Which material is most commonly used for implant screws in dentistry ?
(a) Plastic (b) Copper
(c) Zinc (d) Titanium

36. Dental porcelain or resin is used as _____ (a tooth colored layer used to hide the underlying metal) for crowns and bridges.
(a) Enamel substitute
(b) Veneer
(c) Core material
(d) Aesthetic coating

37. Updating patient clinical and financial records, which have been entered by OCR is one possible application for Voice Activated that would benefit the unit cost and possibly improve the quality of patient
(a) Relationship (b) Satisfaction
(c) Opting for treatment (d) Record-keeping

38. The word computer is derived from the word compute which means
(a) Solve (b) Decode
(c) Interpret (d) Calculate

39. Collection of programs which utilize and enhance the capability of the hardware
(a) Monitor (b) Mouse
(c) Software (d) Printer

40. Microcomputers are generally referred to as
(a) Super computers (b) Analog computers
(c) Personal computers (d) Main frame computers

41. Primary memory is also known as
(a) External memory (b) Pen drive
(c) Internal memory (d) Secondary memory

42. The _____ actually executes the instructions and performs all the calculations and decisions.
(a) Primary Storage Unit (b) Server
(c) Arithmetic Logic Unit (d) Secondary Storage Unit

43. What is one of the primary goals of dentistry ?
(a) To improve mastication efficiency and enhance speech
(b) To replace all natural teeth with artificial ones
(c) To replace only wisdom tooth
(d) To replace only artificial teeth

44. The crown of a tooth is covered by
(a) Cementum (b) Enamel
(c) Dentin (d) Root

45. _____ include pit and fissure sealants.
    (a) Productive materials
    (b) Restorative materials
    (c) Preventive dental materials
    (d) Essential materials

46. _____ result from the mutual attraction of positive and negative charges.
    (a) Ionic bonds
    (b) Covalent bonds
    (c) Non ionic bonds
    (d) Adjunct bonds

47. _____ is the study of the deformation and flow characteristics of matter.
    (a) Rheology
    (b) Teology
    (c) Mycology
    (d) Areology

48. _____ is a combination of two or more metals which are soluble in the molten condition.
    (a) Silver
    (b) Metals
    (c) Alloy
    (d) Gold

49. Properties of solid solution alloys includes
    (a) They have melting ranges
    (b) They are homogenous (their solid is one phase) and so resist tarnish and corrosion
    (c) The strength, and hardness are increased, whereas the ductility is usually decreased
    (d) All of the above

50. _____ is a total integration of the implant with the bone (without a microscopic space) that occurs with ceramic implant materials.
    (a) Biointegration
    (b) Healing Abutment
    (c) Osseointegration
    (d) Mini-Implant

Question Booklet Sl. No.

Series
A

CODE : KEM – 10/24/07

Write here Roll Number and Answer Sheet No.

A

Roll No.

Answer Sheet No.

Duration : 1 Hour

Total Marks : 100

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I Certify that I have checked that the Roll Number and the Answer Sheet Number written by the Candidate on the question paper and the OMR Sheet are correct and the Answer Sheet Number matches the Question Booklet Number exactly.

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Declaration by Candidate :
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4. Please check all the pages of the Booklet carefully. In case of any defect, please ask the Invigilator for replacement of the Booklet.
5. You must not tear off or remove any sheet from this Booklet. The Answer Sheet must be handed over to the Invigilator before you leave the Examination Hall.
6. All questions are compulsory and each Question carries **2** marks.
7. **There is no negative marking for incorrect answers.**
8. This Booklet contains 50 questions.

Test Component	No. of Questions	Page No.
Paper – 7 : Laboratory Assistant	1-50	5 – 11

9. Use of Calculator/Palmtop/Laptop/Other Digital Instrument/Mobile/Cell Phone/Pager is **not** allowed.
10. Candidates found guilty of misconduct/using unfair means in the Examination Hall will be liable for appropriate penal/legal action.
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12. This booklet contains **12** pages.
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SPACE FOR ROUGH WORK

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Paper – 7 : Laboratory Assistant

1. How many bones are present in the adult human body ?

   (a) 196 (b) 200

   (c) 206 (d) 216

2. _____ is a thin bone placed on the posterolateral aspect of the thoracic cage.

   (a) Femur (b) Tibia

   (c) Clavicle (d) Scapula

3. The _____ is the lateral bone of the forearm.

   (a) Ulna (b) Radius

   (c) Humerus (d) Femur

4. Shaft of the ulna has _____ borders and _____ surfaces.

   (a) 2, 2 (b) 3, 3 (c) 4, 4 (d) 5, 5

5. Fracture of the base of the first _____ is called Bennett's fracture.

   (a) Metacarpal (b) Metatarsal

   (c) Both (a) and (b) (d) None of the above

6. How many phalanges are present in each hand ?

   (a) 13 (b) 14

   (c) 15 (d) 16

7. Which is the first bone in the body to ossify ?

   (a) Radius (b) Ulna

   (c) Humerus (d) Clavicle

8. Which of the following is used for feeling the pulse at the wrist ?

   (a) Radial artery (b) Ulnar artery

   (c) Brachial artery (d) None of the above

9. _____ supports the shoulder so that the arm can swing clearly away from the trunk.

(a) Clavicle (b) Scapula

(c) Radius (d) Ulna

10. The _____ is a pyramidal space situated between the upper part of the arm and the chest wall.

(a) Axilla (b) Mastoid

(c) Hyoid (d) Scapula

11. Which structural model of the cell membrane is currently accepted by scientists ?

(a) Danielli-Davson model (b) Fluid mosaic model

(c) Unit membrane model (d) Bilayer model

12. Significance of body fluids include

(a) In homeostasis (b) In transport mechanism

(c) In metabolic reactions (d) All of the above

13. Blood is slightly alkaline and its pH in normal conditions is

(a) 6.4 (b) 7.4

(c) 8.4 (d) 9.0

14. _____ is the clear straw-colored fluid that oozes from blood clot.

(a) Serum (b) Plasma

(c) Both (a) and (b) (d) None of the above

15. Normal value of Serum globulin is

(a) 2.3 g/dL (b) 5.3 g/dL

(c) 4.3 g/dL (d) None of the above

16. Which organ is called graveyard of RBCs ?

(a) Heart (b) Liver

(c) Spleen (d) Lungs

17. Pathological polycythemia is the abnormal increase in the

(a) RBC count
(b) WBC count
(c) Platelet count
(d) Esionophil count

18. _____ is otherwise known as immature RBC.

(a) Reticulocyte
(b) Platelets
(c) White blood cells
(d) Red blood cells

19. _____ is the increase in total WBC count.

(a) Leukocopenia
(b) Leukocytosis
(c) Anisocytosis
(d) Poikilocytosis

20. During the first two months of intrauterine life, the RBCs are produced from

(a) Mesenchyme of yolk sac
(b) Liver
(c) Spleen
(d) Lymphoid organs

21. _____ are the simplest group of carbohydrates and are often referred to as simple sugars.

(a) Monosaccharides
(b) Disaccharides
(c) Polysaccharides
(d) Trisaccharides

22. In the laboratory, many tests are employed to identify the reducing action of sugars. These include

(a) Benedict's test
(b) Fehling's test
(c) Barfoed's test
(d) All of the above

23. _____ is produced by sugar cane and sugar beets.

(a) Lactose
(b) Sucrose
(c) Maltose
(d) Starch

24. Example for simple lipids is

(a) Fats and oil
(b) Waxes
(c) Both (a) and (b)
(d) None of the above

25. _____ is the term used to represent the deterioration of fats and oils resulting in an unpleasant taste.

(a) Saponification

(b) Rancidity

(c) Hydrolysis

(d) None of the above

26. _____ are important constituents of cell membrane and nervous tissues.

(a) Glycolipids (b) Lipoproteins

(c) Steroids (d) Cholesterol

27. Which of the following proteins serves a structural function in the body ?

(a) Immunoglobulins (b) Collagen

(c) Enzymes (d) Membrane receptors

28. _____ is the most common spiral structure of protein.

(a) β-helix (b) α-helix

(c) Primary structures (d) Membrane proteins

29. The tertiary structure of a protein is primarily stabilized by

(a) Hydrogen and peptide bonds only

(b) Covalent and metallic bonds

(c) Hydrophobic interactions, hydrogen bonds, disulfide bonds, and ionic interactions

(d) Only disulfide bonds

30. Which of the following is an example of an oligomeric protein with a quaternary structure ?

(a) Myoglobin (b) Hemoglobin

(c) Insulin (d) Collagen

31. Which stain is most commonly used in histopathology ?

(a) Gram stain (b) Giemsa stain

(c) Hematoxylin and eosin (d) Methylene blue

32. _____ is the microscopic study of the normal tissues of the body.

(a) Histology (b) Pathology

(c) Microbiology (d) Histopathology

33. In _____ tissue bit from an ulcerative lesion is removed.

(a) Excision biopsy (b) Punch biopsy

(c) Cone biopsy (d) Surgical biopsy

34. Which fixatives are used when it is very important to preserve intracellular structure or inclusion ?

(a) Mercuric fixatives

(b) Histochemical fixatives

(c) Cytological fixatives

(d) Formalin based fixatives

35. Choice of fixative for routine specimen is

(a) 10% buffered formalin (b) Zenkers fluid

(c) Carnoys fluid (d) Bouins fluid

36. Factors influencing the rate of tissue processing is

(a) Specimen size (b) Heat

(c) Viscosity (d) All of the above

37. Most commonly used clearing agents for routine use is

(a) Xylene

(b) Sodium bicarbonate

(c) Calcium bicarbonate

(d) Lithium

38. _____ act as a best clearing reagent for research purpose and treatment of delicate tissue, because of its least hardening effect.

(a) Cedar wood oil (b) Xylene

(c) Benzene (d) Formalin

39. _____ is good black colored marker useful for both gross and microscopic marking.

(a) Silver nitrate
(b) Alcian blue
(c) Eosin
(d) Indian ink

40. _____ is a method used to evaluate numerous samples of tissue in a short period.

(a) Tissue microarray
(b) Fixation
(c) Dehydration
(d) Staining

41. Example for differential staining is

(a) Methylene blue
(b) Alberts stain
(c) Gram stain
(d) None of the above

42. _____ are organ of locomotion in bacteria.

(a) Flagella
(b) Fimbriae
(c) Capsule
(d) Ribosomes

43. _____ measures the number of living cells.

(a) Total count
(b) Viable count
(c) Both (a) and (b)
(d) None of the above

44. _____ is the process by which an article, surface or medium is freed of all living microorganisms either in the vegetative or spore state.

(a) Sterilization
(b) Disinfection
(c) Bacteriostatic agents
(d) Chemostatic agents

45. X-rays are example for which ionization method ?

(a) Ionizing radiation

(b) Non-ionizing radiation

(c) Both (a) and (b)

(d) None of the above

46. The transfer of a portion of the DNA from one bacterium to another by a bacteriophage is known as

(a) Transformation (b) Transduction

(c) Conjugation (d) All of the above

47. _____ refers to the overall level of immunity in a community and is relevant in the control of epidemic diseases.

(a) Innate immunity

(b) Acquired immunity

(c) Herd immunity

(d) Local immunity

48. _____ are arranged in grape-like clusters.

(a) Staphylococcus (b) Streptococcus

(c) Pneumococcus (d) Meningococcus

49. _____ is the etiological agents of AIDS.

(a) Human immunodeficiency virus

(b) Human deficient virus

(c) Hepatitis virus

(d) Adenovirus

50. Clinical syndrome caused by *Escherichia coli* is

(a) Urinary tract infections (b) Diarrhea

(c) Pyogenic infections (d) All of the above

Question Booklet Sl. No.

Series
A

CODE : KEM – 10/24/08

Write here Roll Number and Answer Sheet No.

A

Roll No.

Answer Sheet No.

Duration : 1 Hour

Total Marks : 100

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Test Component	No. of Questions	Page No.
Paper – 8 : ECG Technician	1-50	5 – 11

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SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK

Paper – 8 : ECG Technician

1. _____ is the back of trunk in anatomy terminology.
   (a) Medial (b) Lateral
   (c) Dorsal (d) Proximal

2. _____ carry deoxygenated blood towards the heart, with the exception of the pulmonary and umbilical veins which carry oxygenated blood.
   (a) Veins (b) Arteries
   (c) Capillaries (d) Anastomosis

3. _____ tissue cover or line body surface, some are capable of producing secretions with specific functions.
   (a) Connective tissues (b) Epithelial tissues
   (c) Muscle tissues (d) Nerve tissues

4. _____ cavity consists thoracic and abdominal cavity, which are separated by diaphragm.
   (a) Dorsal cavity (b) Ventral cavity
   (c) Pelvic cavity (d) All of the above

5. _____ is water found in blood vessels.
   (a) Plasma (b) Lymph
   (c) Tissue fluid (d) None of the above

6. Dysfunction in which junction type can lead to diseases such as bullous pemphigoid ?
   (a) Gap junctions (b) Tight junctions
   (c) Desmosomes (d) Hemidesmosomes

7. The hydrolysis of triacylglycerols by alkali to produce glycerol and soaps is known as
   (a) Saponification (b) Rancidity
   (c) Hydrolysis (d) None of the above

8. Types of cells are present in the blood is
   (a) Red blood cells or erythrocytes
   (b) White blood cells or leukocytes
   (c) Platelets or thrombocytes
   (d) All of the above

9. In plasma proteins, molecular weight of the globulin is
   (a) 1,00,000 (b) 1,20,000
   (c) 1,46,000 (d) 1,56,000

10. RBC count ranges between _____ of blood.
   (a) 1 and 2 million/cu mm
   (b) 2 and 3 lakhs/mm
   (c) 4 and 5.5 million/cu mm
   (d) 2 and 3 thousands/mm

11. _____ are polymers of monosaccharide units with high molecular weight.
   (a) Monosaccharide (b) Disaccharides
   (c) Polysaccharides (d) Trisaccharides

12. _____ are the sugars that contain one oxygen less than that present in the parent molecule.
   (a) Sugar acids (b) Sugar alcohols
   (c) Deoxysugars (d) L-Ascorbic acid

13. _____ is an important GAC found in the ground substance of synovial fluid of joints and vitreous humor of eyes.
   (a) Hyaluronic acid (b) Niacin acid
   (c) Peptides (d) Amylases

14. The lipids which are uncharged are referred to as
   (a) Derived lipids (b) Neutral lipids
   (c) Miscellaneous lipids (d) Lipoproteins

15. _____ are the transport vehicles for lipids in the circulation.
   (a) Lipoproteins (b) Glycolipids
   (c) Steroids (d) Cholesterol

16. _____ is present within the subarachnoid space surrounding the brain in the skull and the spinal cord in the spinal column.
   (a) Peritoneal fluid (b) Cerebrospinal fluid
   (c) Pericardial fluid (d) Abdominal fluid

17. _____ fluid present in the joint space.
   (a) Peritoneal fluid (b) Pericardial fluid
   (c) Synovial fluid (d) Abdominal fluid

18. Which fluid is also known as ascitic fluid ?
    (a) Peritoneal fluid
    (b) Pericardial fluid
    (c) Synovial fluid
    (d) Cerebrospinal fluid

19. The large molecular weight proteins stay within the capillaries and are responsible for drawing the fluid from the extravascular space and is called the
    (a) Hydrostatic pressure
    (b) Colloidal osmotic pressure
    (c) Lymphatic pressure
    (d) Osmotic pressure

20. _____ forms a dark image against a brighter background.
    (a) Bright field microscope
    (b) Dark ground microscope
    (c) Fluorescent microscope
    (d) Electron microscope

21. Example for chemical method is
    (a) Radiation
    (b) Filtration
    (c) Ethyl alcohol
    (d) Sunlight

22. Example for moist heat sterilization above 100°C is
    (a) Hot air oven
    (b) Pasteurization
    (c) Flash method
    (d) Autoclave

23. What is the purpose of brushing your teeth or dentures the night before and the morning of surgery ?
    (a) To prevent mouth dryness
    (b) To reduce germs in the mouth that could cause infections, like pneumonia
    (c) To enhance the effects of anesthesia
    (d) To prevent tooth decay during surgery

24. Which of the following lifestyle changes is recommended to reduce the risk of infection before surgery ?
    (a) Reducing water intake
    (b) Eating a large meal before surgery
    (c) Stop smoking
    (d) Taking extra vitamin supplements

25. After receiving sedation or anesthesia, which of the following activities should be avoided within 24 hours ?
    (a) Taking short naps
    (b) Operating motorized vehicles or equipment
    (c) Drinking water
    (d) Taking prescribed medications

26. Which of the following should you include in the list of medications you bring to the hospital ?
    (a) Only prescription medications
    (b) Only herbal and dietary supplements
    (c) Prescription, non-prescription medications, herbal supplements and vitamins, including dosages and frequency
    (d) Only vitamins and supplements

27. What is the purpose of an intravenous (IV) line before and during surgery ?
    (a) To monitor heart rate
    (b) To deliver fluids, medications or blood as needed
    (c) To measure blood pressure
    (d) To supply oxygen

28. Which of the following is a function performed by data transmission protocols for efficient and error free transmission of data ?
    (a) Data compression
    (b) Data sequencing
    (c) Data encryption
    (d) Data replication

29. What is the primary purpose of data routing in data transmission protocols ?
    (a) To break long messages into smaller packets
    (b) To find the most efficient route between source and destination
    (c) To control the flow of data between sender and receiver
    (d) To recover lost data during transmission

30. In which data transmission mode can data be sent in both directions, but only one direction at a time ?
    (a) Simplex
    (b) Half-duplex
    (c) Full-duplex
    (d) Bidirectional

31. Which of the following is a key advantage of using Electronic Data Interchange (EDI) in handling orders ?
    (a) Increased inventory levels
    (b) Orders are processed manually, improving accuracy
    (c) Orders are received and processed faster
    (d) Sales staff can spend more time managing customer relationships rather than processing orders

32. Which of the following best describes the “Two-Way Video and Audio” conferencing approach ?
    (a) Video is one-way but audio is two-way, allowing people to talk while viewing the same images.
    (b) Both video and audio communications are two-way, allowing interaction between all sites.
    (c) Only audio is two-way, while video is one-way, enabling people to view images but not communicate.
    (d) Both video and audio are one-way and participants cannot interact.

33. The _____ is a special graph that represents the electrical activity of the heart from one instant to the next.
    (a) Electrocardiogram
    (b) Radiogram
    (c) Cardiograph
    (d) None of the above

34. _____ are like tiny clocks that repetitively generate electrical stimuli.
    (a) Pacemaker cells
    (b) Bundle of his
    (c) Atrio ventricular junction
    (d) Sinoatrial node

35. The return of heart muscle cells to their resting state following stimulation is called
    (a) Ventricular node
    (b) Repolarization
    (c) Polarization
    (d) None of the above

36. The depolarizing electrical current is recorded by the ECG as a _____ when the atria are stimulated and depolarize.
(a) P wave (b) Q wave
(c) R wave (d) T wave

37. The ECG graph paper usually moves at a speed of _____ mm/sec.
(a) 25 (b) 30
(c) 35 (d) 40

38. Augmented unipolar limb in ECG includes
(a) aVR (b) aVL
(c) aVF (d) All of the above

39. _____ is recorded with the electrode in the fourth intercostal space just to the right of the sternum.
(a) Lead V_1 (b) Lead V_2
(c) Lead V_3 (d) Lead V_4

40. _____ is the outer covering of the heart.
(a) Pericardium (b) Epicardium
(c) Myocardium (d) Endocardium

41. _____ is the frequency of heartbeat or heart rate.
(a) Inotropic action (b) Chronotropic action
(c) Dromotropic action (d) Bathmotropic action

42. Components of conductive system in human heart includes
(a) AV node (b) Bundle of his
(c) Right and left bundle branches (d) All of the above

43. _____ drugs are characterized by their ability to block the voltage-gated sodium channel.
(a) Class I antiarrhythmic (b) Class II antiarrhythmic
(c) Class III antiarrhythmic (d) Class IV antiarrhythmic

44. _____ can suppress atrial and ventricular arrhythmias and is longer acting than other drugs in its class.
(a) Quinidine (b) Disopyramide
(c) Procainamide (d) Moricizine

45. _____ is an iodine-containing benzofuran derivative identified as a class III agent because it predominantly prolongs action potentials.
(a) Amiodarone
(b) Disopyramide
(c) Procainamide
(d) Esmolol

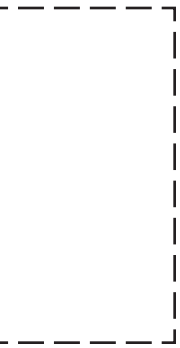
46. What are the two major components of a pacemaker ?
(a) A pulse generator and a battery
(b) A pulse generator and a lead
(c) A lead and an electrode
(d) A microcomputer and a monitor

47. What is the typical operational mode for most modern pacemakers ?
(a) Constant pacing regardless of the patient's own heart rhythm
(b) On-demand mode, activating only when the patient's heart fails to generate an impulse
(c) Only during periods of physical activity
(d) At a preset rate of 60 beats per minute

48. Which type of pacemaker is primarily used in patients with chronic atrial fibrillation and a slow ventricular response ?
(a) Dual-chamber pacemaker
(b) Atrial single-lead pacemaker
(c) Ventricular single-lead pacemaker
(d) Biventricular pacemaker

49. _____ usually show septal dyssynchrony due to abnormal ventricular activation patterns.
(a) Cardiogram
(b) Echocardiograms
(c) Electrogram
(d) None of the above

50. What is the primary purpose of a pacemaker ?
(a) To treat high blood pressure
(b) To correct abnormalities of cardiac impulse formation and conduction
(c) To deliver high-energy shocks during arrhythmias
(d) To monitor heart rate continuously without intervention



Question Booklet Sl. No.

Series
A

CODE : KEM – 10/24/09

Write here Roll Number and Answer Sheet No.

A

Roll No.

Answer Sheet No.

Duration : 1 Hour

Total Marks : 100

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8. This Booklet contains 50 questions.

Test Component	No. of Questions	Page No.
Paper – 9 : OT Technician	1-50	5 – 11

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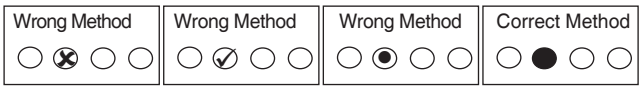

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A

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SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK

Paper – 9 : OT Technician

1. Which of the following structures contribute to the formation of the hard palate ?
   (a) Palatine processes of the maxillae and vertical plates of the palatine bones
   (b) Palatine processes of the maxillae and horizontal plates of the palatine bones
   (c) Nasal processes of the maxillae and vertical plates of the palatine bones
   (d) Nasal processes of the maxillae and horizontal plates of the palatine bones

2. Where is nasopharynx located ?
   (a) Behind the oral cavity and below the soft palate
   (b) Below the hard palate and above the larynx
   (c) Behind the larynx and above the vocal cords
   (d) Behind the nasal cavity and above the soft palate

3. The constrictor muscles of the pharynx are supplied by which nerve plexus ?
   (a) Cervical plexus
   (b) Pharyngeal nerve plexus
   (c) Brachial plexus
   (d) Lumbar plexus

4. The nerve supply of the larynx comes from
   (a) Trigeminal nerve via its mandibular branch
   (b) Facial nerve via its temporal and zygomatic branches
   (c) Vagus nerve via its superior and recurrent laryngeal branches
   (d) Glossopharyngeal nerve via its pharyngeal branches

5. During inhalation, the vocal cords are in which position to reduce resistance to inward gas flow ?
   (a) Adducted
   (b) Abducted
   (c) Tensed
   (d) All of the above

6. The barrier between the alveolus and the pulmonary capillary is extremely thin and consists of three layers. Which of the following is not one of these layers ?
   (a) Type I pneumocytes of the alveolar wall
   (b) Extracellular matrix
   (c) Pulmonary capillary endothelium
   (d) Type II pneumocytes of the alveolar wall

7. What is the approximate resting O_2 consumption in an adult ?
   (a) 50 mL per minute
   (b) 250 mL per minute
   (c) 500 mL per minute
   (d) 1000 mL per minute

8. Injectable solution must be free of
   (a) infectious agents
   (b) pyrogens
   (c) suspended matter
   (d) all of the above

9. Drugs can be sprayed in aerosol form onto which of the following ?
   (a) Internal organs
   (b) Bloodstream directly
   (c) Mucosal surfaces of body cavities accessible from the outside
   (d) Bone marrow

10. Which of the following is the drug of choice for treating status epilepticus ?
   (a) Antidepressants
   (b) Benzodiazepines
   (c) Opioids
   (d) Beta-blockers

11. How do muscle relaxants cause flaccid paralysis of skeletal musculature ?
   (a) By increasing neuromuscular transmission
   (b) By stimulating neuromuscular receptors
   (c) By enhancing calcium release in muscle fibers
   (d) By binding to motor endplate cholinoceptors

12. How do local anesthetics work to block sensation ?
   (a) By irreversibly damaging nerve cells
   (b) By reversibly inhibiting impulse generation and propagation in nerves
   (c) By stimulating nerve impulses
   (d) By increasing blood flow to nerve cells

13. Which of the following is a method of local anesthesia application ?
   (a) Infiltration anesthesia
   (b) Conduction anesthesia
   (c) Surface anesthesia
   (d) All of the above

14. What is the typical chemical structure of local anesthetics used in clinical practice ?
   (a) Primary amines
   (b) Secondary amines
   (c) Tertiary amines
   (d) Quaternary amines

15. Which of the following is a non-depolarizing muscle relaxant ?
    (a) Succinylcholine
    (b) Alcuronium
    (c) Fentanyl
    (d) Propofol

16. What is the function of the oxygen flush valve in anesthesia equipment ?
    (a) It regulates the oxygen flow to the anesthesia machine
    (b) It measures the oxygen concentration in the patient's blood
    (c) It provides a backup oxygen supply during power failure
    (d) It allows direct communication between the oxygen pipeline-pressure system and the patient circuit

17. What is the function of the scavenging system in anesthesia equipment ?
    (a) It delivers oxygen to the patient circuit
    (b) It monitors the gas flow to the anesthesia machine
    (c) It interfaces with the hospital suction system to remove gas flow from the patient circuit
    (d) It filters the air in the operating room

18. Which statement is true about a sterile gown ?
    (a) The entire gown is considered sterile
    (b) Only the back of the gown is sterile
    (c) The gown is sterile from the waist to mid-chest in front and 2 inches above the elbow on the sleeves
    (d) The gown's sleeves are sterile from the shoulder to wrist

19. Requirements for breathing systems
    (a) Delivery of oxygen can be reliably delivered to the patient at the desired concentration and easily adjusted
    (b) Effectively removes carbon dioxide
    (c) Low resistance to breathing
    (d) All of the above

20. What does the term "insufflation" refer to in anesthesia ?
    (a) Delivering oxygen directly into the lungs through a tube
    (b) Removing carbon dioxide from the breathing system
    (c) Administering intravenous anesthetics during surgery
    (d) Blowing oxygen and anesthetic gases across a patient's face without direct contact

21. How does the circle system maintain humidity and heat during ventilation ?
    (a) By using a heated breathing circuit
    (b) By rebreathing exhaled gases
    (c) By incorporating a humidifier into the system
    (d) By adding external moisture to the gas flow

22. What is a common use of an Ambu bag in clinical settings ?
    (a) Delivering inhaled anesthetics during surgery
    (b) Transporting patients and providing emergency ventilation
    (c) Monitoring carbon dioxide levels in the blood
    (d) Administering medications intravenously

23. Who is popularly known as the “first anesthesiologist” ?
    (a) Horace Wells (b) John Newton
    (c) John Snow (d) Joseph Lister

24. Sterilization is defined as
    (a) The destruction of most pathogens
    (b) The reduction of microbial presence
    (c) The destruction of all micro-organisms, including spores
    (d) Cleaning with water and soap

25. In which year was the short-acting barbiturate, Hexobarbital clinically introduced ?
    (a) 1928 (b) 1932 (c) 1940 (d) 1950

26. A preoperative cardiovascular system review should include questions about
    (a) hypertension (b) angina
    (c) myocardial infarction (d) all of the above

27. Which of the following conditions increases the risk of postoperative respiratory failure ?
    (a) Asthma
    (b) Chronic Obstrcutive Pulmonary Disease (COPD)
    (c) Anemia
    (d) Both (a) and (b)

28. The pneumatic components of an anesthesia machine are classified into
    (a) High-pressure system
    (b) Intermediate-pressure system
    (c) Low-pressure system
    (d) All of the above

29. Medical gases are delivered to the anesthesia machine by
    (a) Manual pumping
    (b) Pipeline or cylinders
    (c) Electrical generation of gas
    (d) Direct extraction from the atmosphere

30. Which of the following monitoring techniques is routinely recommended for all types of anesthesia ?
    (a) Pulse oximetry
    (b) Electrocardiography
    (c) Arterial blood pressure measurement
    (d) All of the above

31. Why early detection of rising levels of local anesthetic in the plasma is critical ?
    (a) To ensure effective pain management
    (b) To avoid systemic toxicity
    (c) To prolong the duration of anesthesia
    (d) To prevent local tissue damage

32. Which of the following is essential while preparing for the administration of spinal anesthesia ?
    (a) Availability of an oxygen source
    (b) Immediate access to emergency drugs and resuscitation equipment
    (c) Monitoring and sedation of the patient
    (d) All of the above

33. Which of the following is an amino amide-based local anesthetic ?
    (a) Procaine (b) Mucaine (c) Lidocaine (d) Cocaine

34. What is the main advantage of bupivacaine as a local anesthetic ?
    (a) Rapid onset of action (b) Long duration of action
    (c) Minimal lipid solubility (d) Low risk of cardiotoxicity

35. What is the primary characteristic of morphine's onset of action ?
(a) Rapid onset within 5 minutes
(b) Immediate effect
(c) Delayed onset of more than 2 hours
(d) Onset of action takes 30-60 minutes

36. Hyperbaric spinal anesthetic solutions are prepared by mixing the local anesthetic solution with
(a) Sodium chloride (b) Glucose
(c) Epinephrine (d) Calcium

37. Who were the pioneers of the first epidural injection performed in 1901 ?
(a) Jean-Athanase Sicard and Ferdinand Catheline
(b) Harvey Cushing and William Halsted
(c) John Snow and James Simpson
(d) Sigmund Freud and Carl Jung

38. _____ is a watery solution of minerals, gases, organic molecules and cell organelles that is found between the cell membrane and the nucleus.
(a) Nucleus (b) Cytoplasm
(c) Ribosomes (d) Lysosomes

39. In which stage of mitosis, the chromosomes coil up and become visible as short rods ?
(a) Prophase (b) Metaphase
(c) Anaphase (d) Telophase

40. The bones of the arms, legs, hands and feet are examples of
(a) Short bones (b) Long bones
(c) Flat bones (d) Irregular bones

41. Which of the following organelle is responsible for energy production in the cell ?
(a) Lysosome (b) Endoplasmic reticulum
(c) Golgi apparatus (d) Mitochondrion

42. How many cervical vertebrae is present in vertebral column ?
(a) 5 (b) 6 (c) 7 (d) 8

43. _____ is defined as polyhydroxyaldehydes or ketones or compounds which produce them on hydrolysis.
(a) Carbohydrates (b) Lipids
(c) Proteins (d) Amino acids

44. If two monosaccharides differ from each other in their configuration around a single specific carbon atom, they are referred to as _____ to each other.
(a) Epimers (b) Antigens
(c) Antibodies (d) Enantiomers

45. _____ are a group of organic compounds containing two functional groups amino and carboxyl.
(a) Carbohydrates (b) Lipids
(c) Proteins (d) Amino acids

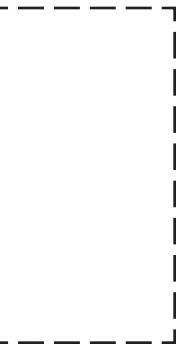
46. _____ is a mass of tissue formed as a result of abnormal, excessive, uncoordinated, autonomous and purposeless proliferation of cells even after cessation of stimulus for growth which caused it.
(a) Neoplasm (b) Ectoplasm
(c) Endoplasm (d) Teoplasm

47. Which of the following best describes “surgical conscience” ?
(a) Adhering to sterile techniques only when observed
(b) A consistent awareness and adherence to aseptic principles
(c) The concept of sanitizing hands only after each patient
(d) The focus on patient outcomes rather than sterile techniques

48. Infections acquired in a health care setting are referred to as
(a) Community infections
(b) Nosocomial infections
(c) Opportunistic infections
(d) Chronic infections

49. Which bacterial pathogen is most commonly associated with surgical site infections ?
(a) Escherichia coli
(b) Clostridium difficile
(c) Staphylococcus aureus
(d) None of the above

50. Which level of disinfection kills all micro-organisms except spores ?
(a) Low level disinfection (b) Intermediate level disinfection
(c) High level disinfection (d) Sterilization



Question Booklet Sl. No.

Series
A

CODE : KEM – 10/24/10

Write here Roll Number and Answer Sheet No.

A

Roll No.

Answer Sheet No.

Duration : 1 Hour

Total Marks : 100

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Test Component	No. of Questions	Page No.
Paper – 10 : Pharmacist	1-50	5 – 11

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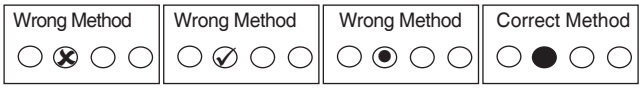

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SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK

Paper – 10 : Pharmacist

1. The first edition of Indian Pharmacopoeia (IP) was published in
   (a) 1965 (b) 1975
   (c) 1955 (d) 1985

2. Powders are more stable than
   (a) Syrup (b) Tablet
   (c) Capsule (d) Elixirs

3. Simple syrup is a saturated solution of
   (a) Sucrose (b) Fructose
   (c) Dextrose (d) None of these

4. QMS stands for
   (a) Quality Management System
   (b) Quality Manufacturing System
   (c) Quality Marketing System
   (d) Quality Machine System

5. The amount of free fatty acids present in oil or fat is indicated by its
   (a) Saponification value (b) Iodine value
   (c) RM value (d) Acid value

6. One of the following is not a haematinic
   (a) Iron (b) Folate
   (c) Vitamin B12 (d) Vitamin B2

7. IUPAC name of Chloroform is
   (a) Trichloromethane
   (b) Dichloromethane
   (c) Tetrachloromethane
   (d) None of the above

8. The antihypertensive that is also useful topically to stimulate hair growth is

(a) Minoxidil
(b) Losartan
(c) Nifedipine
(d) Esmolol

9. The term used to indicate the ability of the cancer to invade other parts of the body and to produce secondary tumours is

(a) Apoptosis
(b) Carcinogenesis
(c) Metastasis
(d) Mutagenesis

10. The name Pharmacognosy coined in the year

(a) 1800
(b) 1851
(c) 1815
(d) 1814

11. What are the sources of crude drugs ?

(a) Plants and Animal
(b) Marine
(c) Tissue culture
(d) All of the above

12. _____ is an admixture or substitution of genuine drugs with spurious, inferior defective, useless, or harmful substances.

(a) Adulteration
(b) Substitution
(c) Spoilage
(d) Admixture

13. Drugs containing volatile oil have a characteristic _____ which will not be present if the drugs lose their volatile oil content.

(a) Texture
(b) Taste
(c) Odour
(d) Fracture

14. Senna belongs to the family of

(a) Leguminosae
(b) Euphorbiaceae
(c) Plantaginaceae
(d) Polygonaceae

15. An important site of foetus blood cell production is

(a) Thymus (b) Lymph

(c) Spleen (d) Pons

16. Which cells are responsible for producing antibodies ?

(a) Helper T cells (b) Cytotoxic T cells

(c) Macrophages (d) B Cells

17. Basic and the smallest functional, living unit of the body tissue is called as

(a) Cell (b) Organ

(c) Node (d) Neurons

18. The longest and the strongest bone of the human body is

(a) Femur (b) Innominate bone

(c) Tibia (d) Fibula

19. Largest gland in human body situated in the uppermost part of the abdominal cavity is

(a) Endocrine (b) Liver

(c) Pineal gland (d) Pancreas

20. The science which deals with the social aspects of the profession of pharmacy is called as

(a) Cultural Pharmacy (b) Retail Pharmacy

(c) Social Pharmacy (d) Industrial Pharmacy

21. This is not a fat soluble Vitamin

(a) Vitamin A (b) Vitamin B

(c) Vitamin D (d) Vitamin E

22. Full form of SARS
    (a) Severe Acute Respiratory Syndrome
    (b) Serious Acute Respiratory Symptom
    (c) Severe Adverse Respiratory System
    (d) Severe Acute Respiratory System

23. The method of pharmacoeconomic evaluation that measures only cost is called as
    (a) Cost-benefit analysis
    (b) Cost-utility analysis
    (c) Cost-effectiveness analysis
    (d) Cost-minimization analysis

24. The term “Nutraceutical” was coined by
    (a) Stephen Defelice
    (b) Alexander Fleming
    (c) Louis Pasteur
    (d) None of the above

25. _____ is characterized by deficiency in folic acid and Vitamin B12.
    (a) Macrocytic anemia
    (b) Normocytic anemia
    (c) Microcytic anemia
    (d) Hemolytic anemia

26. Which of these cells are involved in the acid secretion ?
    (a) G cells
    (b) Parietal cells
    (c) Chief cells
    (d) Mucus cells

27. This Hormone is secreted by Corpus Luteum during pregnancy
    (a) Luteinizing hormone
    (b) Follicle stimulating hormone
    (c) Progesterone
    (d) Estrogen

28. _____ are lipid derived autocoid.
    (a) Bradykinin
    (b) Prostaglandins
    (c) Serotonin
    (d) Kallidin

29. Shock due to severe blood loss or dehydration is termed as

(a) Hypovolemic shock
(b) Cardiogenic shock
(c) Anaphylactic shock
(d) None of the above

30. The first community pharmacy was founded in the year 1729 in

(a) New Jersey
(b) Philadelphia
(c) Bombay
(d) London

31. GPP stands for

(a) Good Packaging Practices
(b) Good Pharmacovigilance Practices
(c) Good Pharmacy Practices
(d) Good Pharma Regulatory Practices

32. This is a form of non-verbal communication

(a) Face to Face
(b) Reports
(c) Facial expressions
(d) Memos

33. A good patient counsellor should not

(a) Be a good listener
(b) Be judgmental
(c) Be flexible
(d) Be tolerant

34. V.E.D. inventory management stands for

(a) Very, Essential, Drugs
(b) Vital, Essential, Desirable
(c) Vital, Efficacy, Desirable
(d) Very, Essential and Delicate

35. Glycogen is an example of

(a) Homopolysaccharide
(b) Heteropolysaccharide
(c) Multisaccharide
(d) None of the above

36. The chemical test to differentiate between reducing and non-reducing sugars is

(a) Molisch's test
(b) Fehling's test
(c) Iodine test
(d) Barfoed's test

37. An example of a mineral falling in the class of oxides

(a) Hematite (b) Sulphur

(c) Gold (d) Gypsum

38. National List of Essential Medicines 2022 of India consists of _____ drugs.

(a) 390 (b) 384

(c) 374 (d) 395

39. Full form of NVBDCP is

(a) National Vector Borne Disease Control Programme

(b) National Vaccine Borne Disease Control Programme

(c) National Vector Borne Disease Control and Prevention

(d) National Viral Borne Disease Control Programme and Prevention

40. Hyperandrogenism is associated with

(a) Eczema (b) Polycystic Ovarian Syndrome

(c) Peptic Ulcer (d) Psoriasis

41. Hospital acquired infectious are called

(a) Primary infection (b) Secondary infection

(c) Nosocomial infection (d) Latent infection

42. Dapsone is used in the treatment of

(a) Leprosy (b) Malaria

(c) Cancer (d) Epilepsy

43. Drugs like tetracycline forms complexes with

(a) Calcium (b) Iodine

(c) Phosphorous (d) Manganese

44. Error that occurs when a patient does not receive a scheduled dose of medication is called

(a) Prescribing error (b) Omission error

(c) Wrong time error (d) Wrong dose error

45. Dangerous Drugs Act was promulgated in the year

(a) 1934 (b) 1930

(c) 1960 (d) 1945

46. Cytotoxic and expired drugs are disposed by

(a) Dumping (b) Autoclave

(c) Incineration (d) Chemical disinfection

47. The Code of Pharmaceutical Ethics in India is given by whom ?

(a) ICI (b) DCI

(c) MCI (d) PCI

48. In addition to being Registrar and Secretary the member of PCI can also act as what ?

(a) President (b) Vice President

(c) Treasurer (d) Chairman

49. What is the full form of NPPA ?

(a) National Pharmaceutical Pricing Authority

(b) National Products and Pricing Administration

(c) National Pharmaceutical Product Authority

(d) National Pharmaceutical Promotion Agency

50. The National Disaster Management Authority (NDMA) is headed by

(a) The President of India

(b) The Prime Minister of India

(c) Governor of States

(d) Chief Minister of States

A

Question Booklet Sl. No.

Series
A

CODE : KEM – 10/24/11

Write here Roll Number and Answer Sheet No.

Roll No.

Answer Sheet No.

Duration : 1 Hour — Total Marks : 100

Declaration by Invigilator :
I Certify that I have checked that the Roll Number and the Answer Sheet Number written by the Candidate on the question paper and the OMR Sheet are correct and the Answer Sheet Number matches the Question Booklet Number exactly.

Signature of the Invigilator with Name

Declaration by Candidate :
I undertake not to employ any unfair means in this exam. I have checked the Question Booklet Number and the Answer Sheet Number and both are identical and have been correctly entered by me wherever indicated.

Signature of the Candidate with Name

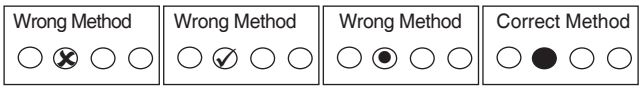
Read the following instructions carefully before you begin to answer the questions.

IMPORTANT INSTRUCTIONS TO CANDIDATES

1. The Roll No. is a **7** digit No., the candidate needs to circle the Roll No. in the Answer Sheet.
2. The appropriate Circle should be shaded for Roll No. This should be done carefully because only the shaded circles are scanned.
3. Valuation of Answer Sheet will be done on the computer. Candidate should not make any stray marks on the Answer Sheet, tamper with or mutilate it. Otherwise it will not be evaluated.
4. Please check all the pages of the Booklet carefully. In case of any defect, please ask the Invigilator for replacement of the Booklet.
5. You must not tear off or remove any sheet from this Booklet. The Answer Sheet must be handed over to the Invigilator before you leave the Examination Hall.
6. All questions are compulsory and each Question carries **2** marks.
7. **There is no negative marking for incorrect answers.**
8. This Booklet contains 50 questions.

Test Component	No. of Questions	Page No.
Paper – 11 : Surveying	1-50	5 – 11

9. Use of Calculator/Palmtop/Laptop/Other Digital Instrument/Mobile/Cell Phone/Pager is **not** allowed.
10. Candidates found guilty of misconduct/using unfair means in the Examination Hall will be liable for appropriate penal/legal action.
11. **No Rough Work is to be done on the Answer Sheet and only single OMR Answer Sheet will be provided.**
12. This booklet contains **12** pages.
13. **Directions** : Each question or incomplete statement is followed by four alternative suggested answers or completions. In each case, you are required to select the one that correctly answers the question or completes the statement and blacken (●) appropriate circle a, b, c or d by Black Ball-Point Pen provided by the Board against the question concerned in the Answer Sheet.
14. Mark your answer by shading the appropriate circle against each question. The circle should be shaded completely without leaving any space. The correct method of shading is given below.



The Candidate must mark his/her response after careful consideration, as it is not possible to change the response once it is marked.

15. There is only one correct answer to each question. You should blacken (●) the circle of the appropriate column, viz., a, b, c or d. If you blacken (●) more than one circle against any one question, the answer will be treated as wrong.
16. Use the space for rough work given at the beginning of the Question Booklet only and not on the Answer Sheet.
17. **You are NOT required to mark your answers in this Booklet. All answers must be indicated in the Answer Sheet only.**

A

DO NOT WRITE HERE

SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK

Paper – 11 : Surveying

1. On a _____, it is possible to measure three dimensions such as metres, decimetres and centimetres; units, tenths, hundredths; yards, feet and inches etc.
   (a) Plain scale (b) Diagonal scale
   (c) Vernier scale (d) Scale of chords

2. A _____ is used to measure an angle or to set-off an angle, and is marked either on a rectangular protractor or on an ordinary box wood scale.
   (a) Theodolite (b) Micrometer
   (c) Tacheometer (d) Scale of chords

3. The _____ is an instrument used for measuring the distance by registering the number of revolutions of a wheel.
   (a) Pedometer (b) Passometer
   (c) Odometer (d) Pacing

4. A Gunter's chain is _____ feet long and consists of 100 links.
   (a) 50 (b) 55 (c) 66 (d) 100

5. _____ is done when the two ends of the survey lines are intervisible.
   (a) Direct ranging (b) Indirect ranging
   (c) Reciprocal ranging (d) None of the above

6. _____ are the lines which are run in the field to check the accuracy of the work.
   (a) Tie lines (b) Base lines
   (c) Survey lines (d) Proof lines

7. The simplest Instrument used for setting out right angle is a
   (a) Cross staff (b) Site square
   (c) Prism square (d) None of these

8. _____ at a place is the horizontal angle between the true meridian and the magnetic meridian shown by the needle at the time of observation.
   (a) Magnetic declination (b) Index frame
   (c) Intersection angle (d) Magnetic inclination

9. _____ is a point on which both minus sight and plus sight are taken on a line of direct levels.
   (a) Back sight
   (b) Fore sight
   (c) Turning point
   (d) Intermediate station

10. A closed contour lines with one or more higher lines within it represents a
   (a) Valley
   (b) Hill
   (c) Vertical cliff
   (d) Gentle slope

11. A _____ is an instrument which measures the area of a plan of any shape very accurately.
   (a) Zero circle
   (b) Hand level
   (c) Barometer
   (d) Planimeter

12. In _____ method, a correction is applied in the field at every chain length and at every point where the slope changes.
   (a) Hypotenusal allowance
   (b) Direct method
   (c) Precise linear measurement
   (d) Displacement of arrows

13. _____ is more convenient and accurate instrument than the cross staff for setting out a line at right angles to another line.
   (a) French cross staff
   (b) Cross staff
   (c) Open cross staff
   (d) Optical square

14. Consider the following statement and choose the wrong statement.
   1. A Gunter's chain has 100 links.
   2. Engineer's chain is 100 feet long.
   3. Revenue chain is 22 feet long.
   (a) Only 1
   (b) Only 2
   (c) Only 3
   (d) All of the above

15. 1 nautical mile is
   (a) 6080 meters
   (b) 120 meters
   (c) 1852 meters
   (d) 500 meters

16. Consider the following statements and choose the wrong statement.
    1. The direction of true meridian through a point can be established by astronomical observation.
    2. The direction of magnetic meridian can be established with the help of a magnetic compass.
    3. Arbitrary meridian are used to determine the relative positions of lines in a large area.

    (a) Both 1 and 2 (b) Only 2
    (c) Both 2 and 3 (d) Only 3

17. _____ is a relatively permanent point of reference whose elevation with reference to some assumed datum is known.
    (a) Mean Sea level (b) Vertical angle
    (c) Bench mark (d) None of these

18. Contour lines of different elevations can unite to form one line only in the case of a
    (a) Hill (b) Valley
    (c) Ridge (d) Vertical cliff

19. Which is not the systems / methods of plane tabling ?
    (a) Radiation (b) Diffusion (c) Intersection (d) Resection

20. A _____ is specially designed for navigation and astronomical purposes and is fairly large instrument with a graduated silver arc of about 15 to 20 cm radius let into a gun metal casting carrying the main parts.
    (a) Box sextant (b) Nautical sextant
    (c) Optical sextant (d) None of these

21. _____ is the type of survey in which a number of connected survey lines form the framework and the directions and lengths of the survey lines.
    (a) Traversing (b) Parallax
    (c) Chain surveying (d) None of these

22. What is function of levelling head in theodolite ?
    (a) To attach the theodolite to the tripod
    (b) To test the horizontality of the transit axis
    (c) To store the recordings
    (d) All of the above

23. The process of turning the telescope in vertical plane through 180° about the trunnion axis is

(a) Collimation (b) Centring
(c) Transiting (d) Swinging

24. In a theodolite, if the lower clamp is not properly clamped, or the shifting head is loose, or the instrument is not firmly tightened on the tripod head, the error introduced is called as

(a) Inaccurate levelling (b) Parallax
(c) Slip (d) Manipulating error

25. The _____ rule also known as compass rule, is mostly used to balance a traverse where linear and angular measurements are of equal precision.

(a) Bowditch's (b) Graphical
(c) Transit (d) Axis

26. Differential levelling is also known as

(a) Fly levelling (b) Profile levelling
(c) Reciprocal levelling (d) Precise levelling

27. The permissible closing error in surveying is expressed as

(a) $E = C \times M$ (b) $E = CM^2$ (c) $E = C\sqrt{M}$ (d) $E = CM^3$

28. Hypsometer is used to determine

(a) Distance between two stations (b) Slope of the ground
(c) Contour lines (d) Altitudes of stations

29. Two contour lines of different elevations

(a) Can overlap each other (b) Can cross each other
(c) Cannot join each other (d) Cannot cross each other

30. _____ is a line lying throughout on the surface of the ground and preserving a constant inclination to the horizontal.

(a) Contour drawing (b) Contour gradient
(c) Contour interpolation (d) None of the above

31. _____ is the process of determining the plotted position of the station occupied by the plane table, by means of sights taken towards known points, locations of which has been plotted.
(a) Resection (b) Traversing
(c) Triangulation (d) None of the above

32. Which statement is false in terms of Plane tabling ?
1. It is simple and cheaper than theodolite.
2. It is particularly useful in magnetic areas where compass may not be used.
3. It is most suitable for large scale maps.
(a) Only 1 (b) Only 2
(c) Only 3 (d) None of the above

33. A _____ is a simple, compact instrument used for reconnaissance and preliminary survey for locating contours on the ground and for taking short cross-sections.
(a) Planimeter (b) Theodolite
(c) Hand level (d) Foot-rule clinometer

34. _____ is a small pocket instrument used for measuring horizontal and vertical angles, measuring chain angles and locating inaccessible points.
(a) Nautical sextant (b) Box sextant
(c) Sound sextant (d) None of the above

35. _____ are used for controlling the side slopes in embankments and in cuttings.
(a) Boning rods (b) Side rails
(c) Batter boards (d) Traveller

36. Vernier theodolites use verniers which have a least count of
(a) 50" to 60" (b) 90" to 100"
(c) 10" to 20" (d) 25" to 30"

37. In Electro-magnetic Distance Measurement (EDM), distances are measured with instruments that rely on _____ of either radio waves, visible light or infra-red waves.
(a) Propagation (b) Reflection
(c) Subsequent reception (d) All of the above

38. What is the purpose of using Geographic Information System (GIS) ?
(a) To support general research
(b) To collect, manipulate and use spatial data in database management
(c) To produce standardized and customized cartographic production
(d) All of the above

39. The _____ provides quickly, accurately and inexpensively the time, position and velocity of the object anywhere on the globe at any time.
(a) Geographic Information System
(b) Global Positioning System
(c) Differential Global Information System
(d) None of the above

40. _____ is preferred for hills and undulating areas, since it is easy to establish stations at reasonable distances apart, with intervisibility.
(a) Triangulation
(b) Trigonometric levelling
(c) Hypsometry
(d) Levelling

41. When the ground is sloping _____ are used to correct the levels of the sloping ground on which the building is to be constructed.
(a) Shallow foundations
(b) Combined foundations
(c) Cantilever foundations
(d) Stepped foundations

42. _____ is the process of spacing the contours proportionately between the plotted ground points established by indirect methods.
(a) Interpolation of contours
(b) Intersection of contours
(c) Contour gradient
(d) Indirect method

43. When a sanctioned estimate is likely to be exceeded by more than 5 percent either from the rates being found insufficient due to change in price level or from any other reason, such estimate is called as
(a) Quantity estimate
(b) Supplementary estimate
(c) Rate item estimate
(d) Revised estimate

44. A _____ foundation is a special type of isolated footing, generally provided for heavily loaded steel stanchions, especially in those locations where bearing capacity of soil is poor.
(a) Mat or raft
(b) Well
(c) Pile
(d) Grillage

45. _____ is one of the most convenient and versatile instrument for preliminary surveying on the surface or underground.

(a) Mountain compass transit
(b) Brunton's universal pocket transit
(c) Both (a) and (b)
(d) None of the above

46. According to Terzaghi, a foundation is _____ if its depth is equal to or less than its width.

(a) Shallow
(b) Deep
(c) Both (a) and (b)
(d) None of the above

47. What is the message given in the following figure using hand signal at the construction site located in busy and noisy area ?



(a) Move to my left
(b) Return to me
(c) Raise height peg or staff
(d) Establish the position

48. _____ levelling makes use of the phenomenon that difference in elevation between two points is proportional to the difference in atmospheric pressures at these points.

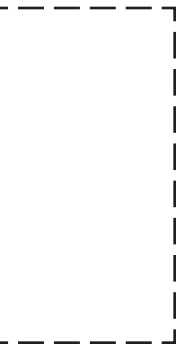
(a) Trigonometric
(b) Barometric
(c) Spirit
(d) None of the above

49. _____ are the unknown multiples or independent constants used for finding most probable values of unknowns.

(a) Correlates
(b) Parallax
(c) Azimuth
(d) All of the above

50. In India, the standard meridian has a longitude of

(a) 82°15′ S
(b) 82°15′ N
(c) 82°30′ E
(d) 82°30′ N



Answer Key for KEM – 10/24 (Set – A)				
Question No.	**Answer Key**		**Question No.**	**Answer Key**
1	b		21	d
2	a		22	d
3	b		23	a
4	x		24	b
5	c		25	d
6	c		26	a
7	b		27	c
8	b		28	c
9	a		29	a
10	d		30	b
11	d		31	c
12	c		32	d
13	a		33	b
14	c		34	a
15	d		35	d
16	d		36	d
17	a		37	c
18	b		38	c
19	a		39	a
20	b		40	c

X represents grace marks

Answer Key for KEM – 10/24 (Set – B)				
Question No.	**Answer Key**		**Question No.**	**Answer Key**
1	b		21	c
2	b		22	c
3	c		23	d
4	c		24	a
5	b		25	a
6	x		26	b
7	a		27	a
8	d		28	b
9	b		29	d
10	a		30	d
11	a		31	d
12	b		32	c
13	d		33	a
14	a		34	c
15	d		35	c
16	b		36	b
17	c		37	a
18	d		38	d
19	a		39	c
20	c		40	d

X represents grace marks

Answer Key for KEM – 10/24 (Set – C)			
Question No.	**Answer Key**	**Question No.**	**Answer Key**
1	b	21	a
2	x	22	b
3	a	23	a
4	d	24	b
5	b	25	c
6	b	26	c
7	b	27	d
8	a	28	d
9	c	29	d
10	c	30	a
11	b	31	b
12	d	32	a
13	b	33	d
14	d	34	d
15	a	35	c
16	a	36	a
17	a	37	c
18	c	38	c
19	d	39	d
20	c	40	c

X represents grace marks

Answer Key for KEM – 10/24 (Set – D)			
Question No.	Answer Key	Question No.	Answer Key
1	c	21	d
2	c	22	a
3	b	23	d
4	a	24	d
5	a	25	a
6	d	26	b
7	b	27	a
8	x	28	b
9	b	29	c
10	b	30	c
11	a	31	a
12	c	32	c
13	d	33	c
14	c	34	d
15	a	35	d
16	a	36	c
17	d	37	c
18	b	38	b
19	d	39	a
20	b	40	d

X represents grace marks

Answer Key for KEM – 10/24/01 (Set – A)			
Question No.	**Ans. Key**	**Question No.**	**Ans. Key**
1	b	26	a
2	b	27	d
3	a	28	d
4	b	29	b
5	b	30	b
6	b	31	d
7	b	32	b
8	b	33	c
9	a	34	c
10	b	35	d
11	b	36	c
12	d	37	b
13	a	38	a
14	b	39	c
15	c	40	b
16	c	41	b
17	d	42	c
18	b	43	a
19	b	44	b
20	b	45	a
21	c	46	b
22	b	47	b
23	c	48	d
24	b	49	c
25	b	50	c

Answer Key for KEM – 10/24/01 (Set – B)			
Question No.	Ans. Key	Question No.	Ans. Key
1	b	26	b
2	b	27	d
3	b	28	a
4	a	29	b
5	b	30	c
6	c	31	b
7	d	32	b
8	b	33	a
9	b	34	b
10	b	35	b
11	c	36	c
12	b	37	b
13	a	38	c
14	c	39	b
15	b	40	b
16	a	41	b
17	d	42	b
18	d	43	d
19	b	44	c
20	b	45	c
21	b	46	d
22	c	47	b
23	a	48	c
24	b	49	c
25	a	50	d

Answer Key for KEM – 10/24/01 (Set – C)			
Question No.	**Ans. Key**	**Question No.**	**Ans. Key**
1	b	26	b
2	b	27	c
3	d	28	a
4	c	29	b
5	c	30	a
6	c	31	b
7	b	32	b
8	a	33	b
9	c	34	a
10	b	35	b
11	c	36	a
12	d	37	d
13	b	38	d
14	b	39	b
15	b	40	b
16	d	41	b
17	b	42	d
18	c	43	a
19	c	44	b
20	d	45	c
21	b	46	c
22	b	47	b
23	a	48	c
24	b	49	b
25	b	50	b

Answer Key for KEM – 10/24/01 (Set – D)			
Question No.	Ans. Key	Question No.	Ans. Key
1	b	26	d
2	d	27	b
3	a	28	c
4	b	29	c
5	c	30	d
6	c	31	b
7	b	32	b
8	c	33	d
9	b	34	c
10	b	35	c
11	b	36	b
12	c	37	b
13	a	38	b
14	b	39	a
15	a	40	b
16	b	41	a
17	b	42	d
18	a	43	d
19	b	44	b
20	b	45	b
21	c	46	c
22	d	47	b
23	b	48	a
24	b	49	c
25	b	50	b

Answer Key for KEM – 10/24/02 (Set – A)				
Question No.	Ans. Key		Question No.	Ans. Key
1	a		26	c
2	b		27	b
3	b		28	c
4	a		29	b
5	a		30	c
6	a		31	c
7	a		32	b
8	c		33	a
9	c		34	a
10	b		35	a
11	c		36	b
12	c		37	b
13	b		38	c
14	b		39	c
15	a		40	b
16	c		41	a
17	c		42	b
18	b		43	c
19	c		44	a
20	a		45	c
21	c		46	b
22	a		47	c
23	b		48	b
24	d		49	b
25	a		50	a

Answer Key for KEM – 10/24/02 (Set – B)				
Question No.	Ans. Key		Question No.	Ans. Key
1	c		26	c
2	b		27	c
3	c		28	b
4	b		29	b
5	c		30	a
6	a		31	a
7	b		32	b
8	b		33	c
9	a		34	a
10	a		35	c
11	c		36	c
12	b		37	c
13	a		38	b
14	a		39	c
15	a		40	a
16	a		41	b
17	a		42	c
18	c		43	b
19	c		44	b
20	b		45	a
21	b		46	c
22	b		47	a
23	c		48	b
24	c		49	d
25	b		50	a

Answer Key for KEM – 10/24/02 (Set – C)				
Question No.	Ans. Key		Question No.	Ans. Key
1	a		26	a
2	b		27	a
3	c		28	c
4	a		29	c
5	c		30	b
6	c		31	c
7	a		32	b
8	b		33	c
9	d		34	b
10	a		35	c
11	a		36	c
12	b		37	c
13	b		38	b
14	a		39	b
15	a		40	a
16	b		41	c
17	b		42	b
18	c		43	a
19	c		44	a
20	b		45	a
21	b		46	c
22	c		47	c
23	b		48	b
24	b		49	c
25	a		50	a

Answer Key for KEM – 10/24/02 (Set – D)

Question No.	Ans. Key	Question No.	Ans. Key
1	c	26	b
2	c	27	b
3	b	28	c
4	c	29	c
5	a	30	b
6	c	31	a
7	b	32	b
8	a	33	b
9	a	34	a
10	a	35	a
11	c	36	b
12	a	37	c
13	b	38	b
14	d	39	b
15	a	40	a
16	c	41	a
17	c	42	a
18	b	43	c
19	b	44	c
20	a	45	b
21	c	46	a
22	b	47	b
23	c	48	c
24	b	49	a
25	c	50	c

Answer Key for KEM - 10/24/03 (Set - A)			
Question No.	Ans. Key	Question No.	Ans. Key
1	d	26	c
2	c	27	b
3	c	28	a
4	a	29	d
5	c	30	c
6	a	31	d
7	a	32	a
8	c	33	d
9	d	34	a
10	d	35	d
11	c	36	d
12	c	37	b
13	c	38	c
14	a	39	b
15	b	40	b
16	b	41	c
17	d	42	b
18	b	43	b
19	a	44	b
20	b	45	d
21	a	46	a
22	d	47	d
23	x	48	c
24	b	49	b
25	a	50	b

X represents grace marks

Answer Key for KEM - 10/24/03 (Set - B)			
Question No.	Ans. Key	Question No.	Ans. Key
1	c	26	c
2	c	27	b
3	c	28	b
4	a	29	b
5	b	30	d
6	d	31	d
7	a	32	c
8	d	33	c
9	a	34	a
10	d	35	c
11	a	36	a
12	d	37	d
13	c	38	x
14	b	39	b
15	b	40	a
16	c	41	d
17	b	42	b
18	a	43	c
19	d	44	b
20	c	45	b
21	b	46	a
22	d	47	a
23	b	48	c
24	a	49	d
25	b	50	d

X represents grace marks

Answer Key for KEM - 10/24/03 (Set - C)			
Question No.	Ans. Key	Question No.	Ans. Key
1	d	26	a
2	a	27	a
3	d	28	c
4	a	29	d
5	d	30	d
6	c	31	b
7	b	32	d
8	b	33	b
9	b	34	a
10	d	35	b
11	c	36	a
12	b	37	d
13	a	38	c
14	d	39	b
15	c	40	b
16	c	41	d
17	c	42	c
18	c	43	c
19	a	44	a
20	b	45	c
21	d	46	a
22	b	47	d
23	c	48	x
24	b	49	b
25	b	50	a

X represents grace marks

Answer Key for KEM - 10/24/03 (Set - D)			
Question No.	**Ans. Key**	**Question No.**	**Ans. Key**
1	a	26	d
2	d	27	a
3	c	28	d
4	b	29	a
5	b	30	d
6	c	31	c
7	c	32	b
8	c	33	b
9	a	34	b
10	b	35	d
11	d	36	d
12	b	37	c
13	c	38	c
14	b	39	a
15	b	40	c
16	a	41	b
17	d	42	d
18	x	43	b
19	b	44	a
20	a	45	b
21	a	46	c
22	a	47	b
23	c	48	a
24	d	49	d
25	d	50	c

X represents grace marks

Answer Key for KEM-10/24/04 (Set – A)

Question No.	Ans. Key	Question No.	Ans. Key
1	c	26	d
2	a	27	c
3	b	28	c
4	d	29	a
5	d	30	d
6	c	31	a
7	b	32	c
8	b	33	a
9	a	34	a
10	a	35	c
11	b	36	d
12	a	37	c
13	b	38	c
14	c	39	a
15	b	40	a
16	c	41	d
17	c	42	d
18	b	43	b
19	a	44	c
20	d	45	c
21	b	46	c
22	c	47	d
23	c	48	b
24	a	49	d
25	b	50	c

Answer Key for KEM-10/24/04 (Set – B)				
Question No.	Ans. Key		Question No.	Ans. Key
1	c		26	b
2	d		27	c
3	b		28	c
4	d		29	a
5	c		30	b
6	c		31	c
7	c		32	b
8	b		33	b
9	a		34	a
10	d		35	a
11	d		36	d
12	d		37	c
13	b		38	c
14	c		39	a
15	c		40	d
16	c		41	b
17	a		42	a
18	b		43	b
19	d		44	c
20	d		45	b
21	d		46	a
22	c		47	c
23	c		48	a
24	a		49	a
25	a		50	c

Answer Key for KEM-10/24/04 (Set – C)

Question No.	Ans. Key	Question No.	Ans. Key
1	b	26	c
2	c	27	b
3	c	28	b
4	a	29	a
5	b	30	a
6	c	31	d
7	d	32	c
8	b	33	c
9	d	34	a
10	c	35	a
11	c	36	b
12	a	37	a
13	b	38	b
14	d	39	c
15	d	40	b
16	d	41	a
17	c	42	c
18	c	43	a
19	a	44	a
20	d	45	c
21	d	46	c
22	d	47	c
23	b	48	b
24	c	49	a
25	c	50	d

Answer Key for KEM-10/24/04 (Set – D)

Question No.	Ans. Key	Question No.	Ans. Key
1	b	26	a
2	a	27	c
3	b	28	a
4	c	29	a
5	b	30	c
6	d	31	c
7	c	32	c
8	c	33	b
9	a	34	a
10	a	35	d
11	b	36	c
12	c	37	d
13	c	38	b
14	a	39	d
15	b	40	c
16	d	41	d
17	d	42	c
18	b	43	c
19	c	44	a
20	c	45	d
21	c	46	c
22	b	47	a
23	b	48	b
24	a	49	d
25	a	50	d

Answer Key for KEM – 10/24/05 (Set – A)				
Question No.	Ans. Key		Question No.	Ans. Key
1	c		26	d
2	d		27	a
3	c		28	a
4	b		29	a
5	a		30	d
6	a		31	a
7	a		32	d
8	b		33	d
9	a		34	d
10	a		35	d
11	b		36	c
12	d		37	b
13	b		38	a
14	c		39	b
15	c		40	b
16	d		41	b
17	d		42	a
18	b		43	d
19	a		44	d
20	a		45	b
21	b		46	c
22	a		47	d
23	b		48	b
24	b		49	c
25	d		50	c

Answer Key for KEM – 10/24/05 (Set – B)				
Question No.	Ans. Key		Question No.	Ans. Key
1	b		26	c
2	a		27	d
3	d		28	b
4	d		29	c
5	b		30	c
6	d		31	a
7	d		32	a
8	b		33	b
9	a		34	a
10	a		35	a
11	d		36	b
12	a		37	a
13	a		38	b
14	a		39	b
15	d		40	d
16	b		41	a
17	d		42	d
18	b		43	d
19	c		44	d
20	c		45	d
21	c		46	c
22	b		47	d
23	a		48	c
24	b		49	b
25	b		50	a

Answer Key for KEM – 10/24/05 (Set – C)

Question No.	Ans. Key	Question No.	Ans. Key
1	a	26	c
2	a	27	b
3	b	28	a
4	a	29	b
5	a	30	b
6	d	31	d
7	a	32	d
8	a	33	b
9	a	34	a
10	d	35	a
11	b	36	c
12	a	37	d
13	d	38	b
14	d	39	c
15	b	40	c
16	c	41	b
17	d	42	a
18	c	43	b
19	b	44	b
20	a	45	d
21	b	46	a
22	d	47	d
23	b	48	d
24	c	49	d
25	c	50	d

Answer Key for KEM – 10/24/05 (Set – D)

Question No.	Ans. Key	Question No.	Ans. Key
1	b	26	b
2	d	27	a
3	b	28	b
4	c	29	b
5	c	30	d
6	a	31	c
7	d	32	d
8	d	33	b
9	d	34	c
10	d	35	c
11	a	36	c
12	a	37	d
13	b	38	c
14	a	39	b
15	a	40	a
16	d	41	c
17	a	42	b
18	a	43	a
19	a	44	b
20	d	45	b
21	b	46	d
22	a	47	d
23	d	48	b
24	d	49	a
25	b	50	a

Answer Key for KEM – 10/24/06 (Set – A)			
Question No.	Answer Key	Question No.	Answer Key
1	b	26	b
2	d	27	d
3	c	28	a
4	b	29	a
5	a	30	c
6	d	31	b
7	d	32	d
8	c	33	b
9	a	34	b
10	a	35	d
11	b	36	b
12	d	37	d
13	b	38	d
14	d	39	c
15	c	40	c
16	b	41	c
17	c	42	c
18	a	43	a
19	d	44	b
20	a	45	c
21	d	46	a
22	c	47	a
23	d	48	c
24	b	49	d
25	a	50	a

Answer Key for KEM – 10/24/06 (Set – B)			
Question No.	Answer Key	Question No.	Answer Key
1	b	26	d
2	d	27	d
3	b	28	c
4	b	29	a
5	d	30	a
6	a	31	b
7	a	32	d
8	c	33	c
9	d	34	b
10	a	35	a
11	d	36	c
12	c	37	c
13	d	38	a
14	b	39	b
15	a	40	c
16	b	41	b
17	d	42	d
18	d	43	a
19	c	44	a
20	c	45	c
21	b	46	b
22	d	47	c
23	b	48	a
24	d	49	d
25	c	50	a

Answer Key for KEM – 10/24/06 (Set – C)

Question No.	Answer Key
1	b
2	d
3	b
4	d
5	c
6	b
7	d
8	d
9	c
10	c
11	a
12	a
13	c
14	d
15	a
16	d
17	d
18	c
19	a
20	a
21	b
22	d
23	a
24	a
25	c
26	c
27	c
28	a
29	b
30	c
31	d
32	c
33	d
34	b
35	a
36	b
37	d
38	c
39	b
40	a
41	b
42	c
43	a
44	d
45	a
46	b
47	d
48	b
49	b
50	d

Answer Key for KEM – 10/24/06 (Set – D)			
Question No.	Answer Key	Question No.	Answer Key
1	a	26	b
2	a	27	d
3	c	28	b
4	d	29	b
5	a	30	d
6	b	31	b
7	c	32	d
8	a	33	b
9	d	34	d
10	a	35	c
11	c	36	d
12	c	37	c
13	a	38	d
14	b	39	b
15	c	40	a
16	b	41	d
17	d	42	d
18	a	43	c
19	a	44	a
20	c	45	a
21	b	46	b
22	d	47	d
23	d	48	c
24	c	49	b
25	c	50	a

Answer Key for KEM – 10/24/07 (Set – A)				
Question No.	Ans. Key		Question No.	Ans. Key
1	c		26	x
2	d		27	b
3	b		28	b
4	b		29	c
5	a		30	x
6	b		31	c
7	d		32	a
8	a		33	b
9	a		34	c
10	a		35	a
11	b		36	d
12	d		37	a
13	b		38	a
14	a		39	d
15	a		40	a
16	c		41	c
17	a		42	a
18	a		43	b
19	b		44	a
20	a		45	a
21	a		46	b
22	d		47	c
23	b		48	a
24	c		49	a
25	b		50	d

X represents grace marks

Answer Key for KEM – 10/24/07 (Set – B)				
Question No.	Ans. Key		Question No.	Ans. Key
1	b		26	c
2	d		27	a
3	a		28	b
4	a		29	a
5	a		30	a
6	c		31	a
7	a		32	d
8	a		33	b
9	b		34	c
10	a		35	b
11	c		36	b
12	a		37	c
13	b		38	a
14	c		39	a
15	a		40	d
16	c		41	b
17	d		42	d
18	b		43	b
19	b		44	a
20	a		45	a
21	x		46	d
22	b		47	a
23	b		48	a
24	c		49	d
25	x		50	a

X represents grace marks

Answer Key for KEM – 10/24/07 (Set – C)				
Question No.	Ans. Key		Question No.	Ans. Key
1	c		26	b
2	a		27	d
3	b		28	a
4	a		29	a
5	a		30	a
6	x		31	c
7	b		32	d
8	b		33	b
9	c		34	b
10	x		35	a
11	a		36	c
12	d		37	a
13	b		38	a
14	c		39	b
15	b		40	a
16	c		41	d
17	a		42	a
18	b		43	a
19	c		44	d
20	a		45	a
21	b		46	b
22	c		47	d
23	a		48	b
24	a		49	a
25	d		50	a

X represents grace marks

Answer Key for KEM – 10/24/07 (Set – D)			
Question No.	**Ans. Key**	**Question No.**	**Ans. Key**
1	c	26	c
2	a	27	d
3	a	28	b
4	b	29	b
5	a	30	a
6	c	31	b
7	a	32	d
8	b	33	b
9	c	34	a
10	a	35	a
11	b	36	x
12	c	37	b
13	a	38	b
14	a	39	c
15	d	40	x
16	b	41	a
17	d	42	d
18	a	43	b
19	a	44	c
20	a	45	b
21	d	46	c
22	a	47	a
23	a	48	b
24	d	49	a
25	a	50	a

X represents grace marks

Answer Key for KEM – 10/24/08 (Set – A)					
Question No.	Ans. Key		Question No.	Ans. Key	
1	c		26	c	
2	a		27	b	
3	b		28	b	
4	b		29	b	
5	a		30	b	
6	c		31	c	
7	a		32	b	
8	d		33	a	
9	d		34	a	
10	c		35	b	
11	c		36	a	
12	c		37	a	
13	a		38	d	
14	b		39	a	
15	a		40	a	
16	b		41	b	
17	c		42	d	
18	a		43	a	
19	b		44	b	
20	a		45	a	
21	c		46	b	
22	d		47	b	
23	b		48	c	
24	c		49	b	
25	b		50	b	

Answer Key for KEM – 10/24/08 (Set – B)				
Question No.	Ans. Key		Question No.	Ans. Key
1	b		26	c
2	c		27	a
3	a		28	b
4	b		29	b
5	a		30	a
6	a		31	c
7	a		32	b
8	d		33	b
9	a		34	b
10	a		35	b
11	b		36	b
12	b		37	d
13	c		38	a
14	b		39	b
15	b		40	a
16	c		41	c
17	c		42	a
18	a		43	d
19	b		44	d
20	a		45	c
21	c		46	c
22	b		47	d
23	a		48	b
24	a		49	c
25	b		50	b

Answer Key for KEM – 10/24/08 (Set – C)			
Question No.	Ans. Key	Question No.	Ans. Key
1	b	26	a
2	d	27	a
3	a	28	d
4	b	29	a
5	a	30	a
6	c	31	c
7	a	32	c
8	b	33	a
9	b	34	b
10	a	35	a
11	c	36	c
12	d	37	b
13	b	38	b
14	c	39	b
15	b	40	b
16	c	41	b
17	b	42	b
18	a	43	c
19	a	44	b
20	b	45	b
21	c	46	b
22	a	47	c
23	d	48	a
24	d	49	b
25	c	50	a

Answer Key for KEM – 10/24/08 (Set – D)

Question No.	Ans. Key	Question No.	Ans. Key
1	c	26	b
2	b	27	c
3	b	28	a
4	b	29	b
5	b	30	a
6	c	31	a
7	c	32	a
8	a	33	d
9	b	34	a
10	a	35	a
11	b	36	c
12	d	37	a
13	a	38	b
14	b	39	b
15	a	40	a
16	c	41	c
17	a	42	d
18	d	43	b
19	d	44	c
20	c	45	b
21	b	46	c
22	b	47	b
23	c	48	a
24	b	49	a
25	b	50	b

Answer Key for KEM – 10/24/09 (Set - A)				
Question No.	Ans. Key		Question No.	Ans. Key
1	b		26	d
2	d		27	d
3	b		28	d
4	c		29	b
5	b		30	d
6	d		31	b
7	b		32	d
8	d		33	c
9	c		34	b
10	b		35	d
11	d		36	b
12	b		37	a
13	d		38	b
14	c		39	a
15	b		40	b
16	d		41	d
17	c		42	c
18	c		43	a
19	d		44	a
20	d		45	d
21	b		46	a
22	b		47	b
23	c		48	b
24	c		49	c
25	b		50	c

Answer Key for KEM – 10/24/09 (Set - B)				
Question No.	Ans. Key		Question No.	Ans. Key
1	b		26	b
2	d		27	a
3	c		28	b
4	b		29	a
5	d		30	b
6	d		31	d
7	c		32	b
8	c		33	d
9	d		34	c
10	d		35	b
11	b		36	a
12	d		37	b
13	b		38	b
14	c		39	c
15	b		40	c
16	d		41	b
17	d		42	b
18	d		43	c
19	b		44	c
20	d		45	b
21	d		46	d
22	c		47	b
23	a		48	d
24	a		49	c
25	d		50	b

Answer Key for KEM – 10/24/09 (Set - C)				
Question No.	Ans. Key		Question No.	Ans. Key
1	d		26	b
2	c		27	d
3	c		28	b
4	d		29	c
5	d		30	b
6	a		31	d
7	b		32	d
8	b		33	d
9	c		34	b
10	c		35	d
11	b		36	d
12	d		37	c
13	c		38	a
14	b		39	a
15	d		40	d
16	d		41	d
17	b		42	b
18	d		43	d
19	c		44	c
20	b		45	b
21	b		46	b
22	a		47	b
23	b		48	c
24	a		49	c
25	b		50	b

Answer Key for KEM – 10/24/09 (Set - D)				
Question No.	Ans. Key		Question No.	Ans. Key
1	a		26	d
2	b		27	b
3	b		28	d
4	c		29	c
5	c		30	b
6	b		31	b
7	b		32	a
8	c		33	b
9	c		34	a
10	b		35	b
11	d		36	b
12	c		37	d
13	a		38	b
14	a		39	c
15	d		40	b
16	b		41	d
17	d		42	d
18	c		43	d
19	b		44	b
20	d		45	d
21	d		46	d
22	c		47	b
23	c		48	d
24	d		49	c
25	d		50	b

Answer Key for KEM – 10/24/10 (Set – A)			
Question No.	Ans. Key	Question No.	Ans. Key
1	c	26	b
2	a	27	c
3	a	28	b
4	a	29	a
5	d	30	b
6	d	31	c
7	a	32	c
8	a	33	b
9	c	34	b
10	c	35	a
11	d	36	b
12	a	37	a
13	c	38	b
14	a	39	a
15	c	40	b
16	d	41	c
17	a	42	a
18	a	43	a
19	b	44	b
20	c	45	b
21	b	46	c
22	a	47	d
23	d	48	c
24	a	49	a
25	a	50	b

Answer Key for KEM – 10/24/10 (Set – B)			
Question No.	**Ans. Key**	**Question No.**	**Ans. Key**
1	d	26	c
2	a	27	d
3	c	28	c
4	a	29	a
5	c	30	b
6	b	31	b
7	c	32	a
8	b	33	d
9	a	34	a
10	b	35	a
11	c	36	d
12	a	37	a
13	a	38	a
14	b	39	b
15	b	40	c
16	c	41	d
17	a	42	a
18	a	43	a
19	a	44	c
20	d	45	c
21	c	46	b
22	c	47	a
23	b	48	b
24	b	49	a
25	a	50	b

Answer Key for KEM – 10/24/10 (Set – C)			
Question No.	Ans. Key	Question No.	Ans. Key
1	d	26	c
2	a	27	c
3	a	28	b
4	b	29	b
5	c	30	a
6	c	31	c
7	a	32	a
8	a	33	a
9	a	34	b
10	d	35	b
11	b	36	b
12	a	37	c
13	b	38	b
14	a	39	a
15	b	40	b
16	c	41	d
17	d	42	a
18	c	43	c
19	a	44	a
20	b	45	c
21	d	46	b
22	a	47	a
23	a	48	d
24	c	49	a
25	c	50	a

Answer Key for KEM – 10/24/10 (Set – D)			
Question No.	**Ans. Key**	**Question No.**	**Ans. Key**
1	d	26	b
2	a	27	a
3	a	28	d
4	c	29	a
5	c	30	a
6	d	31	b
7	a	32	a
8	a	33	b
9	b	34	a
10	c	35	b
11	c	36	d
12	c	37	a
13	b	38	c
14	b	39	a
15	a	40	c
16	c	41	c
17	a	42	d
18	a	43	c
19	b	44	a
20	b	45	b
21	b	46	c
22	c	47	a
23	b	48	a
24	a	49	a
25	b	50	d

Answer Key for KEM-10/24/11 (Set - A)

Question No.	Ans. Key	Question No.	Ans. Key
1	b	26	a
2	d	27	c
3	c	28	d
4	c	29	d
5	a	30	b
6	d	31	a
7	a	32	c
8	a	33	c
9	c	34	b
10	b	35	c
11	d	36	c
12	a	37	d
13	d	38	d
14	c	39	b
15	c	40	a
16	d	41	d
17	c	42	a
18	d	43	d
19	b	44	d
20	b	45	b
21	a	46	a
22	a	47	d
23	c	48	b
24	c	49	a
25	a	50	c

Answer Key for KEM-10/24/11 (Set - B)

Question No.	Ans. Key	Question No.	Ans. Key
1	d	26	b
2	c	27	d
3	d	28	c
4	b	29	c
5	b	30	a
6	a	31	a
7	d	32	c
8	b	33	d
9	a	34	d
10	c	35	b
11	a	36	d
12	c	37	a
13	c	38	d
14	b	39	c
15	c	40	c
16	d	41	c
17	a	42	d
18	d	43	d
19	d	44	b
20	b	45	a
21	d	46	a
22	a	47	a
23	a	48	c
24	c	49	c
25	b	50	a

Answer Key for KEM-10/24/11 (Set - C)				
Question No.	Ans. Key		Question No.	Ans. Key
1	a		26	c
2	c		27	d
3	d		28	d
4	d		29	b
5	b		30	a
6	b		31	d
7	d		32	a
8	c		33	a
9	c		34	c
10	a		35	b
11	d		36	a
12	a		37	d
13	d		38	b
14	d		39	a
15	b		40	c
16	a		41	a
17	c		42	a
18	c		43	c
19	b		44	c
20	c		45	a
21	d		46	d
22	c		47	a
23	d		48	d
24	b		49	c
25	b		50	c

Answer Key for KEM-10/24/11 (Set - D)

Question No.	Ans. Key
1	a
2	c
3	c
4	b
5	c
6	d
7	c
8	d
9	b
10	b
11	d
12	a
13	a
14	c
15	b
16	a
17	a
18	c
19	c
20	a
21	d
22	a
23	d
24	d
25	b

Question No.	Ans. Key
26	d
27	a
28	d
29	c
30	c
31	c
32	d
33	d
34	b
35	a
36	b
37	d
38	c
39	c
40	a
41	a
42	d
43	b
44	a
45	c
46	a
47	c
48	d
49	d
50	b