

MTS EXAMINATION 2014-15

Class : XII

QUESTION PAPER

12

Score : 400

Time : 2 hrs

Register No :

General Instructions

1. This Question Paper consists of two Parts, **Part A** and **Part B**.
2. Candidates will be supplied with an Answer (OMR) sheet.
3. Answer the questions in the OMR sheet by shading the appropriate bubble with black ball point pen.
4. **Part A** Questions are common to all candidates.
5. Questions in **Part B** starting from serial number 81 to 120 are from the optional subjects chosen.
6. Each question carries four marks. One mark will be deducted for each wrong answer.
7. Use the space provided in the last page for rough work.
8. Strictly follow the instructions given in the OMR sheet.

PART A. Questions 1 to 80 (Common to all candidates)

Read the passage given below and answer the questions that follow.

Most human beings want to like, to love their fellowmen. Yet in their everyday lives they, for the most part, practise self-love and more or less hostile towards all those whom they conceive to stand in their way. The reason for this tragic disparity between what they feel to be right and what they do is simply that the structure of this society is such that the life of the person becomes reduced to a competitive struggle for existence. Under such conditions, men everywhere become nasty, brutish and cruel. They become atomistic, selfish, individualistic. Under such a system it is hard for them to do otherwise, for the first law of life is and has always been self-preservation (the satisfaction of basic needs), and if the individual will not do everything in his power to gain security for himself, who will? Well might he echo that Talmudic voice which said : "if I am not for myself, who will be for me? If I am for myself only, what am I? If not now when?" In such a society man lives for himself alone; he is forced to. The right of other persons to existence is acknowledged in so far as it contributes to his security.

1. Most human beings want to like, to love .
A. animals B. plants C. their fellowmen D. nature
2. The first law of life is.
A. self-love B. security C. power D. self-preservation
3. In a society structured on competitive struggle for existence, man is forced to live for.
A. others B. himself alone C. his family D. his friends
4. The individual will do anything in his power to gain.
A. power B. wealth C. security D. fame
5. The word 'hostile' means
A. showing strong dislike or enmity B. insecure C. jealous D. safe

6. The word 'celibate' means
 A. one who believes in fate B. one who is fond of sensuous pleasures
 C. one who has no money D. one who is unmarried
7. Which is the figure of speech used in the line ?
 "Ah happy, happy ,boughs! That cannot shed,
 your leaves , nor ever bid the spring adieu"
 A. oxymoron B. personification C. metaphor D. paradox
8. is a humorous or subtly sarcastic expression in which the intended meaning of the words used is the direct opposite of their usual sense.
 A. Irony B. Climax C. Hyperbole D. Pun
9. The term which stands for the repetition of speech sounds in a sequence of nearby words is
 A. metaphor B. simile C. alliteration D.assonance
10. You had better your cigarette as it is extremely dangerous to smoke in petrol station.
 A. pull through B. hold up C. hang up D. put out
11. You will find the poem page 16
 A. at B. on C. in D. over
12. If I the consequences of my action ,I would not have acted so hastily.
 A. have realised B. realize C. realized D. had realized
13. Unless you all of my questions , I can't do anything to help you.
 A. answered B. answer C. would answer D. were answering
14. The painting that was made by Picasso worth of exhibition in the art gallery
 A. was considering B. considered C. being considered D. was considered
15. He told me that he you.
 A. had never meet B. had never met C. never met D. has not ever met
16. Millions of tons of coal every day to produce energy
 A. are burning B. is burning C. are burnt D. will burn
17. Choose the correct indirect speech.
 "Alas!" said the man." " The old woman is dead"
 A. The man exclaimed with sorrow that the old woman was dead.
 B. The man said alas and that the old woman was dead.
 C. The man was sorry that the old woman is dead.
 D. The man said with pity that the old woman died.
18. Complete with correct clause:
 "Man errs as long as"
 A. he strives B. he lives C. he is happy D. he lived

19. One of us surely going to win.
A. is B. are C. am D. were
20. The word 'havoc' means
A. area B. luck C. poison D. destruction
21. 2015 World cup cricket winner
A. Australia B. Newzland C. Srilanka D. India
22. Among the following who got Bharath Rathna in 2014
A. Sonia Gandhi B. Manmohan Sigh C. Narendra modi D. Atal Bihari Vajpay
23. Who is the new chairman of ISRO
A. Radhakrishnan B. Kasthuri rangana C. A.S Kiran kumar D. Madhavan nair
24. Shivaji had formed a council of eight ministers that administral the Maharashtra empire. The council was named as
A.Naya Padhan B. Ashta sena C. Anhta siddi D. Ashta pradhan
25. Who among the following signed the tereaty of Bassein in 1802 with the British East India Company
A. Baji Rao II B. Sulthan Bahdur C. Baji Rao I D. None of these
26. USN Stands for
A. Union states navy B. United states navy
C. Union states nations D. United states nations
27. IRS Stands for
A. International Revenue Society B. Internal RevenueSociety
C. Internal Revenue Service D. None of hese
28. Who invented cellophone
A.James Ritty B. I.E.Brandenberger C. Alexander Parks D. Clande minie
29. Who was pioneer of "grow more trees movement"
A, CR DAS B. K M M unshi C. SN Bunurji D. M.N Roy
30. Who said "swaraj is my birth right and i shall have it"
A. G.K Gokhale B. B.G Tilak C. Dadabhai naoroji D. M Gandhi
31. Who is known as "Bardoli Gandhi"
A. Sardar patel B. K.Kelappan C. Rahmat Ali D. Gokhale
32. Which is the capital of Andrapradesh
A. Hydrabad B. Amaravathi
C. Tirupathi D. Vijayavada
33. Harmandir Saheb (Golden Temple) was built by
A. Guru Arjan Dev B. Rajendra C. Dharmapala D. None of these
34. Gangaikonda Cholapuram was built by
A. Dharmapala B. Narasimha varman C. Rajendra D. Krishna deva rava

35. Who is the author of “One day wonder”
A. John rights B. Sunil Gavaskar C. Steeve vo D. E.A.S.Prasanna
36. Which one is the first fully supported 64-bit operating system
A. Windows vista B. Windows C.Linux D. Mac
37. Who is considered as father of computer science
A.Charles Babbage B. Alan juring C. John A Fleming D. Linus tolwards
38. Which is the hight peak in Aravalli range
A. Mount Abu B. Mount Guru shikar C. Mount dhupgarh D. Parasnath bill
39. First English newspaper in India
A. The Bengal Gazette B. Culcutta herald
C. The Bengal Journal D. The bombay herald
40. Who was the viceroy of India when Rowlatt Act was passed
A. Lord Irwin B. Lord Reading C.Lord chelmsford D. Lord wavell
41. The longest written constitution in the world is
A. India B. USA C. Britain D. Australia
42. Who wrote the famous critics “Jeevante Kayyopp”
A. K.P Appan B. Rajakrishnan C. Asha Menon D. Narendra prasad
43. Who wrote the latin text Utopia
A. Thomas More B. John Wyclffe C. Charles wilkins D. William logan
44. Who was the first indian to be president of UN general assembly
A. Mrs.Vijayalakshmi pandit B. Ramesh bhandari
C. Natwar sing D. Krishna Menon
45. How many former republic of USSR have become members of commonwealth of Independ-
ed states
A.11 B. 12 C. 10 D. 9
46. Who is known as “Vedaranyan Gandhi”
A. LB Shasthri B. Sardar patel C. B.C Roy D. C.Rajagopal Achary
47. Who is known “Cyclonic monk” from India
A. Gajaram Mohan Roy B. Dayanda Sarwathi
C. SM Banarji D. Swami vivekananda
48. Who is known as punjab kesari
A. Sardar patel B. Lala lajpath rai
C. Subash chandra bose D. Balagangathara thilak
49. One light year =
A. 9.5×10^6 KM B. 9.5×10^9 KM
C. 9.5×10^{12} KM D. 9.5×10^{18} KM
50. The planets visible to us without using a telescope are a
A. 3 B. 4 C. 5 D. 6

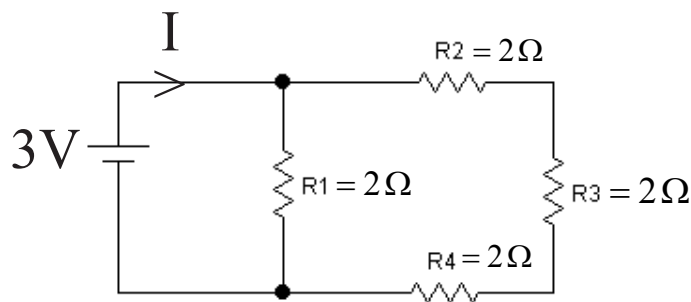
PART B (Optional Subjects)

Part B contains **Section 1** and **Section 2**. There are four subjects in Section 1 viz. Physics, Chemistry, Mathematics & Biology and four subjects in Section 2 viz. Business Studies, Accountancy, Economics & History. Attempt **any one Section** (Section 1 or Section 2) and **any two subjects** in that section. **If the candidate answers more than two subjects in the chosen section, he/she will be disqualified.**

Section 1

Physics (Q.no. 81-90)

81. Two spherical conductors B and C having equal radii and carrying equal charges in them repel each other with a force F when kept apart at some distance. A third spherical conductor having same radius as that of B but uncharged is brought in contact with B, then brought in contact with C and finally removed away from both. The new force of repulsion between B and C is
A. $F/4$ B. $3F/4$ C. $F/8$ D. $3F/8$
82. A comb run through one's dry hair attracts small bits of paper. This is because:
A. Comb is a good conductor B. Paper is a good conductor
C. Atoms in the paper get polarised by the charged comb
D. The comb possesses magnetic property
83. If there are 'n' capacitors in parallel connected to V volt sources, then the energy stored is equal to
A. CV B. $\frac{1}{2}nCV^2$ C. CV^2 D. $\frac{1}{2n}CV^2$
84. What is the current I in the circuit given below ?

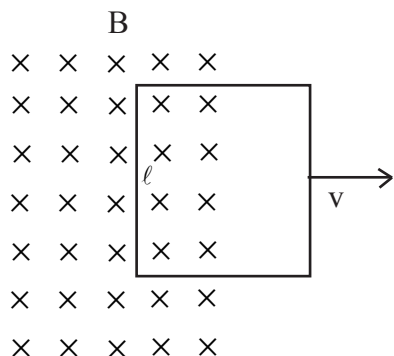


- A. 1 A B. 0.5 A C. 1.2 A D. 2 A
85. A wire of radius r has resistance R . What will its resistance be if its length is doubled ?
A. $0.5 R$ B. $16 R$ C. $2 R$ D. $4 R$
86. Tesla is the unit of
A. Electric flux B. Magnetic flux C. Electric field D. Magnetic induction
87. An electron moves with a velocity of 10^3 ms^{-1} in a magnetic field of induction 0.3 T at an angle 30° . If $\frac{e}{m}$ of electron is $1.76 \times 10^{11} \text{ C kg}^{-1}$, the radius of the path is nearly
A. $4 \times 10^{-8} \text{ m}$ B. $2 \times 10^{-8} \text{ m}$ C. 10^{-6} m D. 10^{-10} m
88. Horizontal and Vertical components of earth's magnetic field are equal, then angle of dip is

.....

- A. 60° B. 45° C. 30° D. 90°

89. A conducting square loop of side l and resistance R moves in its plane with a uniform velocity v perpendicular to one of its size. A magnetic induction B constant in time and space pointing perpendicular and into the plane at the loop exists everywhere with half the loop outside the field as in fig.



The induced emf is.....

- A. 0 B. RvB C. $v \frac{Bl}{R}$ D. Blv

90. A capacitor of $50 \mu F$ is connected to a Supply of 220V and angular frequency 50 rads^{-1} . The value of rms current in the circuit is
A. 0.45 A B. 0.50 A C. 0.55 A D. 0.60 A

Chemistry (Q.no. 91-100)

91. If Z is the number of atoms in the unit cell that represent the closest packing sequence ABC ABC , the number of tetrahedral voids in the unit cell is equal to
A. Z B. $2Z$ C. $\frac{Z}{2}$ D. $\frac{Z}{4}$
92. A 4% solution of cane sugar (Molar mass ≈ 342) is isotonic with 2% solution of a substance 'X'. The molecular weight of 'X' is
A. 34.2 B. 171 C. 88.4 D. 150
93. The standard electrode potential is measured by
A. Electrometer B. Voltmeter C. Pyrometer D. Galvanometer
94. When a piece of copper wire is immerced in a solution of aqueous silver nitrate , the solution becomes blue . This is a consequence of
A. Oxidation of copper B. Oxidation of silver
C. Formation of copper complex D. Reduction of copper
95. A reaction $A \rightarrow B$ follows a second order kinetics. Doubling the concentration of A will increase the rate of formation of B by a factor of
A. 2 B. $\frac{1}{2}$ C. 4 D. $\frac{1}{4}$
96. 'T' is the intensity of absorbed light and 'C' is the concentration of AB for the photochemical process. $AB + h\nu \rightarrow AB^*$ the rate of Formation of AB^* is directly propotional to (AB^* indicates excited state of AB)

A. C B. I C. I² D. C.I³

97. Which of the following is the most effective electrolyte in coagulating colloidal solution of a hydroxide having positive charge ?
 A. Na₂SO₄ b. K₃PO₄ C. NaCl D. K₄[Fe(CN)₆]
98. Zone refining method has been employed for preparing ultra pure sample of
 A. Copper B. Zinc C. Germanium D. Silver
99. SF₆ exists but OF₆ does not, because
 A. d orbitals of sulphur are vacant and are available for bonding
 B. More bonding electrons can be accommodated in orbitals with n=3
 C. Sulphur has larger ionisation energy than oxygen
 D. The difference of electro negativity is less between oxygen and sulphur
100. Mn²⁺ compounds are more resistant than Fe²⁺ compounds towards oxidation to +3 state because
 A. The size of Mn²⁺ ion is smaller than that of Fe²⁺ ions
 B. Mn²⁺ is paramagnetic while Fe²⁺ is diamagnetic
 C. Configuration of Mn²⁺ ion is more symmetrical than that of Fe²⁺ ions
 D. None is correct

Mathematics (Q.no. 101 - 110)

101. A function $f: \mathbb{R} \rightarrow \mathbb{R}$ defined as $f(x) = \frac{2x-3}{5}$. Its inverse is
 A. $\frac{5x+3}{2}$ B. $\frac{5x-3}{2}$ C. $\frac{3x-2}{5}$ D. $\frac{5x+2}{3}$
102. The value of $\sin \left[\frac{\pi}{3} - \sin^{-1} \left(-\frac{1}{2} \right) \right]$ is
 A. $\frac{1}{2}$ B. 0 C. $\frac{1}{4}$ D. 1
103. if $A = \begin{bmatrix} \cos \theta & \sin \theta \\ -\sin \theta & \cos \theta \end{bmatrix}$, then $AA^T =$
 A. $\begin{bmatrix} 1 & 1 \\ 0 & 1 \end{bmatrix}$ B. $\begin{bmatrix} 0 & 1 \\ 0 & 1 \end{bmatrix}$ C. $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ D. $\begin{bmatrix} 1 & 0 \\ 1 & 0 \end{bmatrix}$
104. The value of $\begin{vmatrix} 7^2 & 7^3 & 7^4 \\ 7^3 & 7^4 & 7^5 \\ 7^4 & 7^5 & 7^6 \end{vmatrix}$ is
 A. 1 B. 0 C. 7⁹ D. 7
105. If $x = at^2$, $y = 2at$, then $\frac{d^2 y}{dx^2} =$
 A. $\frac{-1}{t^2}$ B. $\frac{1}{2at^3}$ C. $\frac{-1}{t^3}$ D. $\frac{-1}{2at^3}$
106. The radius of a cylinder increasing at the rate of 2m/s and its altitude is decreasing at the rate of 3m/s. The rate of change of volume when the radius is 3m and altitude is 5m =
 A. $27\pi \text{ cm}^3/\text{s}$ B. $60\pi \text{ cm}^3/\text{s}$ C. $33\pi \text{ cm}^3/\text{s}$ D. $87\pi \text{ cm}^3/\text{s}$

107. $\int_0^2 |x-1| dx$ is equal to
 A. -1 B. 2 C. 0 D. 1
108. $\int e^x (1 + \tan x + \tan^2 x) dx$ is equal to
 A. $e^x \sin x + c$ B. $e^x \cos x + c$ C. $e^x \tan x + c$ D. $e^x \sec x + c$
109. The area of the region bounded by the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ is.....
 A. ab sq.unit B. πab sq.unit C. $\frac{\pi}{ab}$ sq.unit D. None of these
110. The general solution of the differential equation $\frac{d^3 y}{dx^3} = 0$
 A. $ax + bx + cx$ B. $ax^2 + bx + c$
 C. $x^3 + x^2 + x + c$ D. None of these

Biology (Q.no. 111 - 120)

111. Sexual reproduction is considered more beneficial than asexual reproduction because
 A. It is not affected by environmental adverse conditions.
 B. Fertilization is a chance factor.
 C. It rapidly multiplies the population.
 D. It assists in evolution by producing variations.
112. The scutellum observed in a grain of wheat or maize is comparable to which part of the seed in other monocotyledons?
 A. Plumule B. Cotyledon C. Endosperm D. Aleuron layer
113. The main function of the fimbriae of the fallopian tube in females is to
 A. release ovum from the graafian follicle.
 B. make necessary changes in the endometrium for implantation.
 C. help in the development of corpus luteum.
 D. help in the collection of the ovum after ovulation.
114. The placental technique to determine the genetic disorder in a foetus is called
 A. Laparoscopy B. Amniocentesis C. Abstinence D. Coitus interruptus
115. A true dihybrid condition is
 A. $tt Rr$ B. $Tt rr$ C. $tt rr$ D. $Tt Rr$
116. Mother is homozygous 'B' and father is 'A'. What will be the possible blood group in their progeny?
 A. AB and B B. AB and A C. A and B D. O
117. During transcription if the nucleotide sequence of the DNA strand that is being coded is ATACG, then the nucleotide sequence in the mRNA would be:
 A. TCTGG B. UAUGC C. UATGC D. TATGC
118. Down's syndrome occurs as a result of

A. Trisomy B. Tetrasomy C. Autopolyploidy D. Allopolyploidy

119. Which of the following are not analogous organs?

- A. Fins of fishes and flippers of whales
- B. Stings of honey bee and scorpion
- C. Thorn of bougainvillea and tendril of cucurbita
- D. Wings of insect and wings of pterodactyl

120. The correctly matched pair is

- A. Okazaki fragments- Splicing
- B. RNA polymerase - RNA primer
- C. Central dogma- Codon
- D. Restriction endonuclease - Genetic engineering

Section 2

Business Studies (Q.no. 81-90)

81. Management is

- A. Art B. science C. literature D. both art and science

82. is regarded as the essence of management

- A. organising B. planning C. co-ordination D. grouping

83. 'The father of management thought'?

- A. F.W.Taylor B. Henry fayol C. Koontz D. Donnel

84. Espirit de corps means

- A. Unberrimae fidae B. Usefull corps C. Neither A nor B D. Union is strength

85. Accountability is derived from

- A. authority B. centralisation C. delegation D. responsibility

86. Planning is

- A. goal oriented B. mental process C. Neither A nor B D. Both A and B

87. All those conditions and forces under which business operations are carried out are known as

- A. Business environment B. Business jurisdiction
- C. Business jurisdiction D. business area

88. Process of analysing and establishing the need and availability of employees is known as

- A. Internet planning B. Man power planning C. Placement D. External planning

89. Companies act came into exist on

- A. 1932 B. 1936 C. 1986 D. 1956

90.is said to be management in action
A. planning B. organising C. directing D. controlling

Accountancy (Q.no. 91-100)

91. Interest on partners loan is always paid @ in the absence of specified rate.
A. 5% B. 6% C. 10% D. 12%
92. On dissolution of the firm, partner's capital accounts are closed through
A. Realisation A/C B. Bank A/C C. Capital A/C D. Balance sheet
93. The account prepared by a partnership firm to show the distribution of net profit is called
.....
A. Capital A/C B. Profit and loss appropriation A/C
C. Income statement D. Profit and loss A/C
94. When shares are allotted account is credited.
A. Share capital B. Share allotment A/C C. Bank A/C D. Cash A/C
95. Calls in advance is to the company
A. Capital B. Asset C. Liability D. Expenditure
96. The balance of the forfeited shares account after reissue of forfeited shares is transferred to
..... A/C
A. Reserve capital A/C B. Capital reserve A/C
C. Share capital A/C D. General reserve A/C
97. Goodwill : Real account ; Bank account :
A. Nominal A/C B. Real A/C C. Both A and B D. Personal A/C
98. Luca Pacioli is considered as the father of accounting lived in
A. France B. Germany C. Italy D. England
99. Loss on issue of debentures is to the company.
A. A capital loss B. A gain C. A liability D. None of these
100. The authorized share capital of a company is shown in
A. Article of Association B. Prospectus
C. Memorandum of Association D. None of the above

Economics (Q.no. 101-110)

101. Example of micro economic variable is
A. Market demand B. National income C. Wholesale price index D. Aggregate demand
102. Net investment is equal to
A. Gross investment + depreciation B. Gross investment ÷ depreciation
C. Gross investment × depreciation D. Gross investment - depreciation
103. Given the fact that MRS between goods X and Y is constant, IC is

A. Convex to the origin B. Concave to the origin C. Straight line D. None of the above

104. Which of the following is a flow variable ?

A. Wealth B. Consumption C. Quantity of money D. None of these

105. When demand curve is parallel to X-axis, elasticity of demand is

A. Unity B. Greater than Unity C. Zero D. Infinity

106. Per unit cost of a good is called

A. Average cost B. Variable cost C. Total fixed cost D. None of these

107. Which of the following is not a transfer payment?

A. Interest on national debt B. Donations
C. Old-age pensions D. Retirement pensions

108. In India, suppliers of money are :

A. Government of the country B. Banking system of the country
C. Both (A) and (B) D. None of these

109. Average fixed cost (AFC) is indicated by

A. A straight line parallel to x-axis B. Rectangular hyperbola
C. A straight line parallel to y-axis D. U shaped curve

110. Inferior goods are those whose income effect is

A. Positive B. Negative C. Zero D. None of the above

History (Q.no. 111-120)

111. List 'A' consists of some Harappan sites and List 'B' consists of the findings in the sites of list 'A'. Match them correctly.

A	B
1. Banawali	a. Traces of canals
2. Shortughai	b. terracotta models of the plough
3. Dholavira	c. sixteen skeletons of people
4. Mohenjo daro	d. water reservoir

Choose the correct answer

A. 1-d, 2-c, 3-b, 4-a B. 1-a, 2-b, 3-d, 4-c C. 1-d, 2-c, 3-a, 4-b D. 1-b, 2-a, 3-d, 4-c

112. Consider the following statement:

Assertion (A): The material culture of Harappan sites began to transform after 1900 BCE

Reason (R): Climatic change, excessive flood, over use of landscape, deforestation and shifting & drying up of river may have brought changes

Choose the correct answer from the options given below:

A. Both A & R are true, but R is not correct explanation of A

- B. Both A & R are true and R is the explanation of A
- C. A is false, but R is true
- D. A is true, but R is false.

113. Which of the following principles had included in Ashoka dhamma?

1. Respect towards elders
2. Generosity towards Brahmanas and those who renounced worldly life
3. Respect for religions and traditions other than one's own.
4. Treat the slaves and servants kindly

Choose the correct answer

- A. 1 and 2
- B. 2&4
- C. 3&4
- D. All of the above

114. Who among the following rulers were adopted the title 'Devaputra'?

- A. Pandyas
- B. Kushana
- C. Cholas
- D. Guptas.

115. What were the duties of chandalas as per Manusmriti?

- A. They had to live outside the village
- B. use discarded utensils
- C. wear clothes of the dead and ornaments of iron
- D. All the above

116. The first woman ordained as a Bhikkhuni in Budhist Sangha was

- A. Mahapajapati Gotami
- B. Trishala
- C. Prabhavati Gupta
- D. Meera bai

117. The biography of saint or religious leader is known as

- A. Historiography
- B. Hagiography
- C. Epigraphy
- D. Philosophy

118. Which of the following was not associated with the idea of Jainism?

- A. The path of moderation between severe penance and self-indulgence will help to rise above the worldly troubles.
- B. Non-injury to living beings is central to Jaina philosophy
- C. Asceticism and penance are required to free oneself from the cycle of Karma
- D. The entire world is animated: even stones, rocks and water have life.

119. Pick out the French doctor and philosopher who lived in the Mughal court

- A. Jean-Baptist Tavernier
- B. Jesuit Roberto Nobili
- C. Francois Bernier
- D. Manucci

120. Which was the capital of Magadha?

- A. Mathura
- B. Kushinagara
- C. Vaishali
- D. Rajagaha

Space for rough works