

11P/287/6

Set No: (1)

Question Booklet No 1170

( To be filled up by the candidate by blue / black ball-point pen )

Roll No.

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Roll No.

(Write the digits in words).....

Serial No. of Answer Sheet.....

Day and Date.....

(Signature of Invigilator)

**INSTRUCTIONS TO CANDIDATES**(Use only **blue/black ball-point pen** in the space above and on both sides of the **Answer Sheet**)

1. Within 10 minutes of the issue of the Question Booklet, check the Question Booklet to ensure that it contains all the pages in correct sequence and that no page/question is missing in case of faulty Question Booklet bring it to the notice of the Superintendent/Invigilators immediately to obtain a fresh Question Booklet.
2. Do not bring any loose paper, written or blank, inside the Examination Hall *except the Admit Card without its envelope.*
3. A separate Answer Sheet is given. *It should not be folded or mutilated. A second Answer Sheet shall not be provided. Only the Answer Sheet will be evaluated.*
4. Write your **Roll Number and Serial Number of the Answer Sheet by pen** in the space provided above.
5. *On the front page of the Answer Sheet, write by pen your Roll Number in the space provided at the top, and by darkening the circles at the bottom. Also, wherever applicable, write the Question Booklet Number and the Set Number in appropriate places.*
6. No overwriting is allowed in the entries of Roll No., Question Booklet No. and Set No. (if any) on OMR sheet and Roll No. and OMR sheet No. on the Question Booklet.
7. Any changes in the aforesaid entries is to be verified by the invigilator, otherwise it will be taken as unfair means.
8. Each question in this Booklet is followed by four alternative answers. *For each question, you are to record the correct option on the Answer Sheet by darkening the appropriate circle in the corresponding row of the Answer Sheet, by pen as mentioned in the guidelines given on the first page of the Answer Sheet.*
9. For each question, darken only one circle on the Answer Sheet. If you darken more than one circle or darken a circle partially, the answer will be treated as incorrect.
10. *Note that the answer once filled in ink cannot be changed.* If you do not wish to attempt a question leave all the circles in the corresponding row blank (such question will be awarded zero marks).
11. For rough work, use the inner back page of the title cover and the blank page at the end of this Booklet.
12. Deposit **only OMR Answer Sheet** at the end of the Test.
13. You are not permitted to leave the Examination Hall until the end of the Test.
14. If a candidate attempts to use any form of unfair means, he/she shall be liable to such punishment as the University may determine and impose on him/her.

[ उपर्युक्त निर्देश हिन्दी में अन्तिम आवरण-पृष्ठ पर दिये गए हैं ]

Total No. of Printed Pages : 17

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No. of Questions / प्रश्नों की संख्या : 120

Time/समय : 2 Hours/घण्टे ]

[Full Marks/पूर्णांक : 360

**Note :** (1) Attempt as many questions as you can. Each question carries 3 (Three) marks. *One mark will be deducted for each incorrect answer.* Zero mark will be awarded for each unattempted question.

अधिकाधिक प्रश्नों को हल करने का प्रयत्न करें। प्रत्येक प्रश्न 3 (तीन) अंक का है। प्रत्येक गलत उत्तर के लिए एक अंक काटा जायेगा। प्रत्येक अनुत्तरित प्रश्न का प्राप्तांक शून्य होगा।

(2) If more than one alternative answers seem to be approximate to the correct answer, choose the closest one.

यदि एकाधिक वैकल्पिक उत्तर सही उत्तर के निकट प्रतीत हो, तो निकटतम सही उत्तर दें।

1. Enzymes are substances which

- |                           |                         |
|---------------------------|-------------------------|
| (1) Stops the reaction    | (2) Change the reaction |
| (3) Catalyze the reaction | (4) Begin the reaction  |

2. Enzyme amylase is produced by

- |                                 |                               |
|---------------------------------|-------------------------------|
| (1) <i>Rhizopus sexualis</i>    | (2) <i>Aspergillus oryzae</i> |
| (3) <i>Cercospora personata</i> | (4) <i>Fusarium oxysporum</i> |

3. *Shorea* belongs to family

- |                      |                 |
|----------------------|-----------------|
| (1) Dipterocarpaceae | (2) Verbenaceae |
| (3) Anacardiaceae    | (4) Rubiaceae   |



10. Deamination is due to

- (1) Acriflavin (2) 2-Aminopurine  
(3) Nitrogen mustard (4) Nitrous acid

11. Trisomy is denoted by

- (1)  $2n - 1$  (2)  $2n + 1$  (3)  $2n - 1 - 1$  (4)  $2n + 2$

12. Overlapping gene is reported in

- (1) Q $\beta$  (2) HIV (3) CaMV (4) h3

13. Enzymes are

- (1) Lipid act as biological component with catalytic properties  
(2) Polypeptide chain without catalytic property  
(3) Protein as biological catalyst  
(4) Protein

14. Torula stage occur in

- (1) *Mucor* (2) *Rhizopus* (3) *Agaricus* (4) *Saccharomyces*

15. Coenobial alga is

- (1) *Oedogonium* (2) *Anacystis* (3) *Microcystis* (4) *Hydrodictyon*

16. Duration of mitotic phase is

- (1) 2 hr (2) 1 hr (3) 3 hr (4) 30 second

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17. 5-carbon sugar is

- (1) Galactose      (2) Xylose      (3) Fructose      (4) Mannose

18. Short-day plant is

- (1) *Mirabilis*      (2) *Hyoscyamus*      (3) *Pisum*      (4) *Xanthium*

19. Causal organism of white rust is

- (1) *Fusarium*      (2) *Erysiphe*      (3) *Albugo*      (4) *Peronospora*

20. Medullary vascular bundles are present in

- (1) *Boerhaavia*      (2) *Nyctanthes*      (3) *Bignonia*      (4) *Salvadora*

21. Which of the following is a correct representation of enzyme catalyzed reaction ?

- (1)  $E + S \rightarrow ES \rightarrow E + P$   
(2)  $E + S \rightleftharpoons ES \rightarrow E + P$   
(3)  $ES \rightleftharpoons E + P$   
(4)  $E \rightarrow E + S \rightarrow ES \rightleftharpoons E + P$

22. Retort cells are found in

- (1) *Funaria*      (2) *Adiantum*      (3) *Sphagnum*      (4) *Azolla*

23. Coralloid root present in

- (1) *Pentoxylon*      (2) *Gnetum*      (3) *Zamia*      (4) *Taxus*



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31. Mevalonic acid helps in biosynthesis of

- (1) ABA                      (2) GA                      (3) IAA                      (4) BAP

32. Ovulation in vertebrates is induced by

- (1) LTH                      (2) LH                      (3) Insulin                      (4) Oxytocin

33. IFN- $\gamma$  is produced by

- (1) T-lymphocytes      (2) Leucocytes      (3) Fibroblasts      (4) RBC

34. Polygalacturonase is involved in

- (1) Cellulose degradation                      (2) Phosphate solubilization  
(3) Pectin degradation                      (4) Starch solubilization

35. Guanyl transferase is involved in

- (1) Capping                      (2) Shifting of polypeptide chain  
(3) Movement of ribosome                      (4) Formation of polyribosome

36. Cleavage polyembryony is reported in

- (1) *Citrus*                      (2) *Casuarina*                      (3) *Brassica*                      (4) *Mangifera*

37. Example of biopolymer is

- (1) Cellulose                      (2) Xanthan                      (3) Starch                      (4) Sucrose

38. *Nitrosolobus* is a

- (1) Nitrogen fixing bacterium                      (2) Hydrogen bacterium  
(3) Nitrifying bacterium                      (4) Sulphur bacterium

39. Which cytogenetic phenomenon is indicated by a  $F_2$  phenotypic ratio of 7:1:1:7 ?
- (1) Epistasis      (2) Crossingover      (3) Linkage      (4) Duplication
40. Causal organism of little leaf of brinjal is
- (1) Nematode      (2) Bacteria      (3) Virus      (4) Mycoplasma
41. *Aulosira* is a
- (1) Unicellular filamentous cyanobacteria  
(2) Multicellular filamentous non heterocystous blue green alga  
(3) Multicellular filamentous heterocystous cyanobacteria  
(4) Unicellular colonial cyanobacteria
42. Club moss is commonly known as
- (1) *Lycopodium*      (2) *Selaginella*      (3) *Equisetum*      (4) *Pentoxylon*
43. Trophic levels are formed by
- (1) Only plants      (2) Only animals  
(3) Only carnivores      (4) Organisms linked in food chain
44. Leakage of electrolyte from cell is due to the activity of
- (1) Toxin      (2) Protease      (3) Lipase      (4) Cellulase
45. Zearalenone is produced by the species of
- (1) *Penicillium*      (2) *Fusarium*      (3) *Alternaria*      (4) *Aspergillus*



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46. Puff region is present in

- (1) B chromosome
- (2) Lampbrush chromosome
- (3) Polytene chromosome
- (4) X-Chromosome

47. Dinitrophenol disturbs respiration by preventing

- (1) Oxidative phosphorylation
- (2) DNA transcription
- (3) Mitochondrial lysis
- (4) Anoxia

48. Yolk sac is not found in

- (1) Amphioxus
- (2) Chick
- (3) Birds
- (4) Mammals

49. Taq DNA polymerase isolated from

- (1) *Thermus aquaticus*
- (2) *Thermus inequalis*
- (3) *Bacillus amyloliquefaciens*
- (4) *Bacillus thuringiensis*

50. DNA methylation is responsible for

- (1) Mutation
- (2) Gene silencing
- (3) DNA replication
- (4) SOS Repair

51. The intron splicing studied in detail by

- (1) Marshall Nirenberg
- (2) Matthew Meselson
- (3) Thomas Ceek
- (4) Haragobind Khurana

52. Chromosome rings are formed during

- (1) Translocation
- (2) Inversion
- (3) Duplication
- (4) Delition

53. Citrus canker is caused by
- (1) *Xanthomonas oryzae*                      (2) *Xanthomonas citri*  
(3) *Xanthomonas malvacearum*      (4) *Venturia inaequalis*
54. Name the unusual base found in the nucleic acid of T<sub>4</sub> DNA
- (1) 5-hydroxy methylcytosine      (2) Dihydrouridine  
(3) Inosine                                      (4) Pseudouridine
55. Narcotics are obtained from
- (1) *Digitalis*              (2) *Aconitum*              (3) *Papaver*              (4) *Atropa*
56. Chlorophyll molecules contain
- (1) Mn                      (2) Mg                      (3) Cu                      (4) Fe
57. Spore bearing structure in *Ophioglossum* is known as
- (1) Spike                      (2) Sporangium              (3) Prothallus              (4) Sporophyll
58. Which histone is absent in nucleosome core
- (1) H<sub>2</sub>                      (2) H<sub>3</sub>                      (3) H<sub>4</sub>                      (4) H1
59. Acid rain is mainly caused by increased concentration of
- (1) Ozone and dust                      (2) CO and CO<sub>2</sub>  
(3) NO<sub>2</sub> and SO<sub>2</sub>                      (4) NH<sub>3</sub> and CH<sub>4</sub>
60. Which group of plants has to face physiological dryness
- (1) Halophytes              (2) Lithophytes              (3) Epiphytes              (4) Hydrophytes

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**61.** Stalked pyrenoids are found in the alga

- (1) *Anabaena*      (2) *Volvox*      (3) *Saprolegnia*      (4) *Ectocarpus*

**62.** Progressive evolution theory of Bryophyte is proposed by

- (1) Wettstein      (2) Cavers      (3) Evans      (4) Harris

**63.** Maturation of sperm takes place in

- (1) Vas efferens      (2) Vas deferens  
(3) Epididymis      (4) Seminal vesicle

**64.** Middle ear contain

- (1) Incus      (2) Radius      (3) Humurus      (4) Ulna

**65.** Luteinizing Hormone secreted from

- (1) Pancreas      (2) Pituitary      (3) Thyroid      (4) Gonad

**66.** Plugging of vessels is caused by

- (1) *Verticillium*      (2) *Phytophthora*      (3) *Albugo*      (4) *Peronospora*

**67.** Angiospermic type leaf present in

- (1) *Ephedra*      (2) *Taxus*      (3) *Gnetum*      (4) *Ginkgo*

**68.** Amphiphloic siphonostele is present in

- (1) *Pteris*      (2) *Psilotum*      (3) *Adiantum*      (4) *Lycopodium*

69. Name the interaction of gene that gives the ratio 15:1 in  $F_2$  generation
- (1) Duplicate gene                      (2) Complementary gene  
(3) Inhibitory gene                      (4) Epistasis
70. Cellulose degrading fungus is
- (1) *Chaetomium*    (2) *Fusarium*    (3) *Alternaria*    (4) *Agaricus*
71. Name a microalga widely known as a source of protein
- (1) *Anacystis*    (2) *Pandorina*    (3) *Spirullina*    (4) *Aphanothece*
72. Anti HIV drug is
- (1) Methotrexate    (2) Azidothymidine    (3) Bleomycin    (4) Kethoxal
73. Callose is composed of
- (1) D-Glucopyranose.    (2) D-erythrose    (3) D-fructose    (4) L-sarbose
74. Inulin is found in
- (1) Chickpea    (2) Potato    (3) *Dahlia*    (4) Pea
75. Calyptrogen is present in
- (1) *Amaryllis*    (2) *Casuarina*    (3) *Oryza*    (4) *Zea mays*
76. Active cell division can be seen in
- (1) Cambium    (2) Pith    (3) Pericycle    (4) Cortex
77. Cruciate plakea stage is
- (1) 2 celled    (2) 4 celled    (3) 8 celled    (4) 16 celled

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78. The tautomer of Thymine pairs with

- (1) Adenine      (2) Guanine      (3) Cytosine      (4) Thymine

79. The planktonic forms of plants are

- (1) Autotrophs      (2) Heterotrophs      (3) Chemotrophs      (4) Insectivores

80. Aerosol pollutants present in the jet plane emission is

- (1) Sulphur dioxide      (2) Fluorocarbon  
(3) Carbon tetrachloride      (4) Carbon monoxide

81. Commercially available biofertilizer nitrazina contains

- (1) *Rhizobium*      (2) BGA      (3) *Azotobacter*      (4) *Azospirillum*

82. Syphilis is caused by

- (1) *Haemophilus ducreyi*      (2) *Treponema pallidum*  
(3) *Staphylococcus aureus*      (4) *Chlamydia trachomatis*

83. The hormone involved in the metamorphosis of tadpole is

- (1) Thyroxine      (2) TSH      (3) Prolactin      (4) Somatotrophin

84. TDZ used as a

- (1) Gibberellic acid      (2) Auxin  
(3) Cytokinin      (4) Growth inhibitor

85. What is phytochrome ?  
(1) Growth hormone (2) Carbohydrate (3) Enzyme (4) Pigment
86. Ornithine cycle is responsible for the synthesis of  
(1) Urea (2) Aspartic acid (3) Citrulline (4) Arginine
87. Which one of the following is used in soil treatment ?  
(1) Captan (2) Sulfex (3) PCNB (4) Thiram
88. Which of the following organism is used for preparing biocontrol agent ?  
(1) *Alternaria* (2) *Trichoderma* (3) *Helminthosporium* (4) *Penicillium*
89. Trabaculated endodermis is found in  
(1) *Selaginella* (2) *Equisetum* (3) *Marsilea* (4) *Azolla*
90. In *Jungermanniales* the small ventral leaf is called  
(1) Legule (2) Sporophyll (3) Spike (4) Amphigastrium
91. Toxin present in kappa particle is  
(1) Ergot (2) Aflatoxin (3) Paramicin (4) None
92. Root knot of vegetables is caused by  
(1) *Sclerotium* (2) *Meloidogyne* (3) *Synchytrium* (4) *Taphrina*
93. Kanha biosphere reserve situated in  
(1) Assam (2) Gujarat  
(3) Madhya Pradesh (4) Meghalaya

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94. Hydrophyte is

- (1) *Salvinia*      (2) *Aloe*      (3) *Capparis*      (4) *Nerium*

95. Reserpine for reducing blood pressure obtained from the root of

- (1) *Ephedra gerardiana*      (2) *Cinchona calisaya*  
(3) *Rauwolfia serpentina*      (4) *Withania somnifera*

96. The active agent of Chalcones is chemically a

- (1) Mucoprotein      (2) Nucleoprotein      (3) Lipoprotein      (4) Histones

97. Fairy ring fungus belongs to the family

- (1) Pucciniaceae      (2) Agaricaceae      (3) Dematiaceae      (4) Pezizaceae

98. Rust of Linseed is caused by

- (1) *Uromyces*      (2) *Puccinia*      (3) *Taphrina*      (4) *Melanopsora*

99. Sporocarp is present in

- (1) *Marsilea*      (2) *Isoetes*      (3) *Selaginella*      (4) *Psilotum*

100. Seed germination promoted by

- (1) ABA      (2) Coumarin      (3) Ferulic acid      (4) Thiourea

101. Gongrosira stage is characteristic feature of

- (1) *Cladophora*      (2) *Vaucheria*      (3) *Ulothrix*      (4) *Oedogonium*

102. *Nitrosomonas* is a

- (1) Chemoorganotroph                      (2) Chemolithotroph  
(3) Photoorganotroph                      (4) Photolithotroph

103. CAM plants belongs to

- (1) Euphorbiaceae   (2) Solanaceae   (3) Poaceae   (4) Cucurbitaceae

104. Which amino acid is involved in the biosynthesis of colchicine ?

- (1) Lysine              (2) Arginine              (3) Tyrosine              (4) Tryptophan

105. Diadelphous ( 9+1 ) stamens occur in

- (1) Malvaceae              (2) Papilionaceae   (3) Rosaceae              (4) Poaceae

106. When several genes are transcribed as one mRNA, the mRNA is said to be

- (1) Multimeric              (2) Polymeric              (3) Polycistronic   (4) Polyclonal

107. Complete reduction of the disulfide bonds of immunoglobulin G yields how many different polypeptide chains.

- (1) One                      (2) Two                      (3) Three                      (4) Four

108. An antibiotic actinomycin D blocks

- (1) Transcription in eukaryotes  
(2) Transcription in both eukaryotes and prokaryotes  
(3) Polypeptide chain elongation  
(4) Polypeptide chain initiation



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109. Which of the following amino acid does not have optical rotation ?

- (1) Alanine            (2) Glutamine        (3) Glycine            (4) Asparigine

110. Serum is

- (1) Blood minus fibrinogen  
(2) Lymph minus corpuscles  
(3) Lymph  
(4) Blood minus corpuscles and fibrinogen

111. The condition of fusion of filaments as well as anthers is

- (1) Gynandrous        (2) Synandrous        (3) Syngenesious (4) Protandrous

112. Cytokinin synthesis occurs maximum in

- (1) Root                (2) Fruit                (3) Leaves              (4) Shoot tip

113. Haemodialysis is carried out in case of severe defect in

- (1) Lungs                (2) Liver                (3) Kidneys              (4) Pancrease

114. Down syndrome is due to

- (1) Trisomy of chromosome 21  
(2) Trisomy of X chromosome  
(3) Trisomy of Y chromosome  
(4) Deletion of chromosome 21

115. A living fossil is

- (1) *Gnetum*            (2) *Marchantia*        (3) *Taxus*                (4) *Ginkgo*

116. T cells matures in

- (1) Bone marrow    (2) Thymus    (3) Liver    (4) Spleen

117. Electroporation facilitates introduction of foreign DNA into the target organism by

- (1) Changing the porosity of the cell wall  
(2) Changing the electric potential of the cell wall  
(3) Active transport across the cell wall  
(4) Lysis of the cell wall

118. Which of the following is a metabolic disorder ?

- (1) Sickle cell anaemia    (2) Thalassemia  
(3) Phenylketonuria    (4) Jaundice

119. Pseudoelator present in

- (1) *Marchantia*    (2) *Riccia*    (3) *Anthoceros*    (4) *Porella*

120. The gastrular morphogenetic movements which occur in chick having heavily telolecithal egg are

- (1) Convergence    (2) Involution  
(3) Elongation    (4) All the above

## अभ्यर्थियों के लिए निर्देश

(इस पुस्तिका के प्रथम आवरण-पृष्ठ पर तथा उत्तर-पत्र के दोनों पृष्ठों पर केवल नीली-काली बाल-प्वाइंट पेन से ही लिखें)

1. प्रश्न पुस्तिका मिलने के 10 मिनट के अन्दर ही देख लें कि प्रश्नपत्र में सभी पृष्ठ मौजूद हैं और कोई प्रश्न छूटा नहीं है। पुस्तिका दोषयुक्त पाये जाने पर इसकी सूचना तत्काल कक्ष-निरीक्षक को देकर सम्पूर्ण प्रश्नपत्र की दूसरी पुस्तिका प्राप्त कर लें।
2. परीक्षा भवन में लिफाफा रहित प्रवेश-पत्र के अतिरिक्त, लिखा या सादा कोई भी खुला कागज साथ में न लायें।
3. उत्तर-पत्र अलग से दिया गया है। इसे न तो मोड़ें और न ही विकृत करें। दूसरा उत्तर-पत्र नहीं दिया जायेगा। केवल उत्तर-पत्र का ही मूल्यांकन किया जायेगा।
4. अपना अनुक्रमांक तथा उत्तर-पत्र का क्रमांक प्रथम आवरण-पृष्ठ पर पेन से निर्धारित स्थान पर लिखें।
5. उत्तर-पत्र के प्रथम पृष्ठ पर पेन से अपना अनुक्रमांक निर्धारित स्थान पर लिखें तथा नीचे दिये वृत्तों को गाढ़ा कर दें। जहाँ-जहाँ आवश्यक हो वहाँ प्रश्न-पुस्तिका का क्रमांक तथा सेट का नम्बर उचित स्थानों पर लिखें।
6. ओ० एम० आर० पत्र पर अनुक्रमांक संख्या, प्रश्न-पुस्तिका संख्या व सेट संख्या (यदि कोई हो) तथा प्रश्न-पुस्तिका पर अनुक्रमांक संख्या और ओ० एम० आर० पत्र संख्या की प्रविष्टियों में उपरिलेखन की अनुमति नहीं है।
7. उपर्युक्त प्रविष्टियों में कोई भी परिवर्तन कक्ष निरीक्षक द्वारा प्रमाणित होना चाहिये अन्यथा यह एक अनुचित साधन का प्रयोग माना जायेगा।
8. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार वैकल्पिक उत्तर दिये गये हैं। प्रत्येक प्रश्न के वैकल्पिक उत्तर के लिये आपको उत्तर-पत्र की सम्बन्धित पंक्ति के सामने दिये गये वृत्त को उत्तर-पत्र के प्रथम पृष्ठ पर दिये गये निर्देशों के अनुसार पेन से गाढ़ा करना है।
9. प्रत्येक प्रश्न के उत्तर के लिये केवल एक ही वृत्त को गाढ़ा करें। एक से अधिक वृत्तों को गाढ़ा करने पर अथवा एक वृत्त को अपूर्ण भरने पर वह उत्तर गलत माना जायेगा।
10. ध्यान दें कि एक बार स्याही द्वारा अंकित उत्तर बदला नहीं जा सकता है। यदि आप किसी प्रश्न का उत्तर नहीं देना चाहते हैं, तो सम्बन्धित पंक्ति के सामने दिये गये सभी वृत्तों को खाली छोड़ दें। ऐसे प्रश्नों पर शून्य अंक दिये जायेंगे।
11. रफ कार्य के लिये इस-पुस्तिका के मुखपृष्ठ के अंदर वाला पृष्ठ तथा अंतिम खाली पृष्ठ का प्रयोग करें।
12. परीक्षा के उपरान्त केवल ओ० एम० आर० उत्तर-पत्र परीक्षा भवन में जमा करें।
13. परीक्षा समाप्त होने से पहले परीक्षा भवन से बाहर जाने की अनुमति नहीं होगी।
14. यदि कोई अभ्यर्थी परीक्षा में अनुचित साधनों का प्रयोग करता है, तो वह विश्वविद्यालय द्वारा निर्धारित दंड का/की भागी होगा / होगी।