

उम्मीदवार इस पुस्तिका के सबसे ऊपरी सील को खोलकर पृष्ठ संख्या 2 और 3 के मध्य स्थापित OMR उत्तर शीट को निकाल लें।
Candidates should open the top side of the seal of this Booklet and take out the OMR Answer Sheet placed between page no. 2 and 3.

परीक्षा पुस्तिका सं. :
Test Booklet No. :

A4-R5 : Internet of Things and its Applications SET - 01

परीक्षा पुस्तिका शृंखला : 11
Test Booklet Series :

निर्धारित समय : 3 घंटे
Time Allowed : 3 Hours

अधिकतम अंक : 100
Maximum Marks : 100

रोल नं. :

उत्तर शीट सं. :

प्रश्नों के उत्तर देने से पहले निम्नलिखित अनुदेशों को ध्यान से पढ़ लें। / Read the following instructions carefully before you begin to answer the questions.

उम्मीदवारों के लिए अनुदेश	Instructions to the Candidates
<p>1. प्रश्नों के उत्तर लिखना आरंभ करने से पहले आप इस पुस्तिका की जाँच करके सुनिश्चित कर लें कि इसमें पूरे पृष्ठ (12) हैं तथा कोई पृष्ठ या उसका भाग कम या दुबारा तो नहीं आ गया है। यदि आप इस पुस्तिका में कोई त्रुटि पाएं, तो तत्काल इसके बदले दूसरी पुस्तिका ले।</p> <p>2. ओएमआर उत्तर-शीट प्रश्न पुस्तिका में ही उपलब्ध रहेगी। कृपया सुनिश्चित करें कि ओएमआर शीट संख्या और परीक्षा पुस्तिका संख्या समान हैं। ओएमआर शीट पर जानकारी भरने से पहले ओएमआर शीट पर छपे निर्देशों को ध्यान से पढ़ें। आपको ओएमआर उत्तर-पत्रक पर सभी विवरणों को सही ढंग से पूरा और कोड करना होगा, ऐसा न करने पर आपकी उत्तर पुस्तिका का मूल्यांकन नहीं किया जा सकता है। प्रश्नों का उत्तर देना शुरू करने से पहले आपको ओएमआर उत्तर-पत्रक पर दिये गए निर्धारित स्थान पर अपने हस्ताक्षर करने होंगे। इन निर्देशों का पूर्ण रूप से पालन किया जाना चाहिए, ऐसा न करने पर आपकी ओएमआर उत्तर-पुस्तिका का मूल्यांकन नहीं किया जा सकता है।</p> <p>3. इस पुस्तिका में कुल 100 बहुविकल्पीय प्रश्न हैं जो कि केवल इंग्लिश भाषा में उपलब्ध हैं। प्रत्येक प्रश्न के 4 विकल्प दिए गए हैं, (A), (B), (C) और (D)। किसी भी स्थिति में प्रत्येक प्रश्न का केवल एक विकल्प ही सही उत्तर है। यदि आपको एक से अधिक विकल्प सही लगें तो सबसे अधिक उचित एक विकल्प का चुनाव करें और उत्तर शीट में सम्बंधित प्रश्न के सामने वाले उपयुक्त गोले को काला करें।</p> <p>4. प्रत्येक सही उत्तर के लिए 1 अंक दिया जाएगा। गलत उत्तर के लिए कोई नकारात्मक अंकन नहीं है।</p> <p>5. गोले को काला करने के लिए केवल काले/नीले बॉल प्वाइंट पेन का प्रयोग करें। गोले को एक बार काला करने के बाद इसको मिटाने या बदलने की अनुमति नहीं है। यदि किसी प्रश्न के सामने एक से ज्यादा गोले काले किये गए हों तो मशीन द्वारा उसके लिए शून्य अंक दिया जाएगा।</p> <p>6. किसी भी स्थिति में उत्तर शीट को न मोड़ें।</p> <p>7. उत्तर-पुस्तिका पर कोई भी रफ कार्य नहीं करना है। रफ कार्य के लिए इस पुस्तिका में स्थान दिया गया है।</p> <p>8. परीक्षा हॉल/कमरों में मोबाइल फ़ोन तथा बेतार संचार साधन पूरी तरह निषिद्ध हैं। उम्मीदवारों को उनके अपने हित में सलाह दी जाती है कि मोबाइल फ़ोन/किसी अन्य बेतार संचार साधन को स्विच ऑफ करके भी अपने पास न रखें। इस प्रावधान का अनुपालन न करने को परीक्षा में अनुचित उपायों का प्रयोग माना जायेगा और उनके विरुद्ध कार्यवाही की जाएगी, जिसमें उनकी उम्मीदवारी रद्द करना भी शामिल है।</p> <p>9. अभ्यर्थी अपनी उत्तर पुस्तिका पर्यवेक्षक को सौंपे बिना और अपने रोल नंबर के सामने उचित स्थान पर उपस्थिति पत्रक पर हस्ताक्षर किए बिना परीक्षा हॉल/कक्ष से बाहर नहीं जा सकता। इसके अलावा अभ्यर्थी को उपस्थिति पत्रक पर हस्ताक्षर करने से पहले यह भी सुनिश्चित करना चाहिए कि बुकलेट नंबर, बुकलेट सीरीज और ओएमआर उत्तर पुस्तिका संख्या सही ढंग से लिखी गई हो। ऐसा ना करने पर, ओएमआर उत्तर पुस्तिका को अमान्य माना जाएगा/मूल्यांकन नहीं किया जा सकता है।</p>	<p>1. Before you start to answer the questions you must check this booklet and ensure that it contains all the pages (12) and see that no page or portion thereof is missing or repeated. If you find any defect in this Booklet, you must get it replaced immediately.</p> <p>2. OMR Answer-Sheet is within the Question Booklet. Please ensure OMR Answer-Sheet number and Test Booklet No. of Question Paper are same. Read the instructions printed on OMR Answer-Sheet carefully before filling the information on the OMR Answer-Sheet. You must complete and code all the details on the OMR answer sheet correctly, failing which your answer sheet may not be evaluated. You must also put your signature on the OMR Answer-Sheet at the prescribed place before you start answering the questions. These instructions must be fully complied with, failing which, your OMR Answer-Sheet may not be evaluated.</p> <p>3. This booklet consists of 100 Multiple Choice Questions and are printed in English language only. Each question has 4 (four) alternatives (A), (B), (C) and (D). In case if you find more than one correct answer, then choose the most appropriate single option and darken the appropriate circle in the answer sheet against the related question.</p> <p>4. For each correct answer One mark will be given and no negative marking for incorrect answer.</p> <p>5. Use Black/Blue ball point Pen to darken the circle. Answer once darkened is not allowed to be erased or altered. Against any question if more than one circle is darkened, machine will allot zero mark for that question.</p> <p>6. Do not fold answer sheet in any case.</p> <p>7. No rough work should be done on the Answer-Sheet. Space for rough work has been provided in this booklet.</p> <p>8. Mobile phones and wireless communication devices are completely banned in the examination hall/rooms. Candidates are advised not to keep mobile phones/any other wireless communication devices with them even in switched off mode, in their own interest. Failing to comply with this provision will be considered as using unfair means in the examination and action will be taken against them including cancellation of their candidature.</p> <p>9. Candidate should not leave the examination hall/room without handing over his/her Answer-Sheet to the invigilator and without signing on the attendance sheet at proper place against your roll number. Further candidate should also ensure that booklet no., booklet series and OMR Answer-Sheet No. are correctly written on attendance sheet before signing on it, failing in doing so, may lead to disqualification/ no evaluation of OMR Answer-Sheet will be done.</p>

जब तक आपसे कहा न जाए तब तक प्रश्न-पुस्तिका न खोलें / DO NOT OPEN THE QUESTION BOOKLET UNTIL YOU ARE TOLD TO DO SO.

उम्मीदवार का नाम/Name of Candidate :

उम्मीदवार के हस्ताक्षर/Signature of Candidate :

1. _____ is an example of 16 bit microcontroller.
 (A) 8031 Microcontroller
 (B) 8051 Microcontroller
 (C) 8096 Microcontroller
 (D) None of the above

2. A real or perceived threat or challenge that causes the body to produce a response is a(n) _____.
 (A) Frustration (B) Phobia
 (C) Injury (D) Stressor

3. The LPWAN :
 (A) Low Power Wide Area Network
 (B) Low bit rate
 (C) Both (A) and (B)
 (D) Short range wireless communication.

4. What is the output of "pin1" if "pin2" is sent "1011" where 1 is 5V and 0 is 0V ?

```
int pin1 = 12;
int pin2 = 11;
void setup() {
  pinMode(pin1, OUTPUT);
  pinMode(pin2, INPUT);
  Serial.begin(9600);
}
void loop() {
  if(digitalRead(pin2)==1) {
    digitalWrite(pin1,LOW);
  }
  else if(digitalRead(pin2)==0) {
    digitalWrite(pin1,HIGH);
  }
}
```

 (A) 1110 (B) 0100
 (C) 1111 (D) 1011

5. Which of the following environmental factors affects the personality ?
 (A) Social factors
 (B) Cultural factors
 (C) Emotional factors
 (D) All of the above

6. Which one from the following is not compulsory technology for establishment of IoT Setup ?
 (A) RFID
 (B) Nanotechnology
 (C) Cloud Computing
 (D) None of the above

7. How many layers are there in OSI ?
 (A) 5 (B) 4
 (C) 7 (D) 6

8. Which of the following is not an element of threat modelling ?
 (A) Asset (B) Vulnerability
 (C) Threat (D) Time

9. Which kind of word to be avoided for verbal communication ?
 (A) Simple (B) Technical
 (C) Easy (D) Local language

10. Which statement is true in concern with Request-response IoT communication model ?
 (A) Each Request-response pair is dependent of others
 (B) Request - response is a stateless communication model
 (C) Client server architecture of Request-response uses queues
 (D) In Request-response publisher is a client and broker are server.

11. After the formal event is over, to whom should you write a thank you note ?
- (A) The event host
 (B) Sponsoring organizations
 (C) Special guests or dignitaries
 (D) All of the above
12. The LilyPad Arduino is concerned with :
- (A) e-textiles and wearables projects
 (B) sewn to fabric
 (C) ATmega168V/ ATmega328V
 (D) All of these
13. How many flags are there in 8085 Microprocessor ?
- (A) 05 (B) 09
 (C) 12 (D) 15
14. In C, how do you set up an array ?
- (A) `int k = {3,4}`
 (B) `int k = new int[2]`
 (C) `int k [2] = {3,4};`
 (D) `int k(2) = {3,4};`
15. What is switching time for relay to operate with Arduino ?
- (A) 5-10 s (B) 5-10 ms
 (C) 10-15 ms (D) 10-12 ms
16. Type of circuit board which can be used for extension of capabilities of Arduino board.
- (A) Bread Board
 (B) Shield
 (C) Actuator
 (D) Microprocessor
17. We can deploy IoT feature in Refrigerator to make it smart device, but _____.
- (A) Firstly extend connectivity feature
 (B) Make it Smaller in size
 (C) First trained the people to operate
 (D) No prerequisites required
18. DHT11 is _____.
- (A) Microprocessor
 (B) Motion sensor
 (C) Switching Device
 (D) Humidity sensor
19. In Arduino programming _____ indicate going forever.
- (A) `void loop` (B) `void setup`
 (C) `while` (D) `OUTPUT`
20. What is the output of C Program. ?
- ```
int main()
{
 int k=10;
 while(k <= 12)
 {
 printf("%d ", k);
 k++;
 }
 return 0;
}
```
- (A) 10 10 10 (B) 12 12 12  
 (C) 10 11 12 (D) 12 11 10
21. Clock Speed of Arduino UNO is :
- (A) 16 MHz (B) 12MHz  
 (C) 18 MHz (D) 14 MHz

22. Which of the following is a function of a sensor ?  
 (A) Separate physical parameters  
 (B) Activate a response  
 (C) Track & transfer data to processor  
 (D) Move a robotic arm
23. What are/is essential concept(s) for M2M Communication success ?  
 (A) Continuous connectivity  
 (B) Message Delivery for sleeping devices  
 (C) Message communication path selection  
 (D) All of the above
24. Which of the following is not an application of IoT ?  
 (A) Wearables (B) Smart Grid  
 (C) Arduino (D) Smart City
25. ISM stand for :  
 (A) Industrial, Scientific and Medical  
 (B) Information, Scientific and Medical  
 (C) Industrial, Science and Medical  
 (D) Industrial, Scientific and Medicine
26. Which One is not the type of Memory ?  
 (A) NVRAM (B) EPROM  
 (C) MASKED ROM (D) DPROM
27. A digital value is converted to an analogue signal using which of the following Methods ?  
 (A) analogRead() (B) ADC  
 (C) DAC (D) pinMode()
28. A huge amount of data is generated in IoT system that must be :  
 (A) Analyzed (B) Visualized  
 (C) Stored (D) All of the above
29. Which one known as network provider ?  
 (A) Arduino uno (B) ESP8266  
 (C) LM35 (D) PIC1825G62
30. Which one is incorrect for the Arduino UNO's analog pin group ?  
 (A) Logic (1/0) not used for input/output.  
 (B) Used for the digital conversion of analog values taken from external environment.  
 (C) There are 6 analog input pins.  
 (D) The resolution of each input is 10 bits.
31. In a capacitive type humidity sensor, how many different types of failures have you seen ?  
 (A) 2 (B) 4  
 (C) 6 (D) 3
32. Which of the following depicts your social behavior ?  
 (A) Tradition (B) Culture  
 (C) Manners (D) Greetings
33. The process of building iot hardware and devices enhanced with smart sensors and embedded system using many of the shelf components like sensors, circuits and microcontrollers is called ?  
 (A) Prototyping (B) Casting  
 (C) Protocasting (D) Protocol typing
34. coap://localhost:4589/Temperature/temp1, here the 4589 is.  
 (A) Port address  
 (B) MAC address of Device  
 (C) Unique identifier of the parameter  
 (D) Unique identifier of the device

35. Which type of negotiation necessitates the presence of an observer ?  
 (A) Formal (B) Informal  
 (C) Both (D) Friendly
36. There is the prospect of immediate \_\_\_\_\_ in oral communication.  
 (A) Reaction (B) Reflection  
 (C) Response (D) Reset
37. Which Function is used for PWM pin in Arduino ?  
 (A) digitalWrite() (B) serial.print ()  
 (C) analogWrite() (D) pinMode()
38. Which of following is/are suggested time management technique(s) ?  
 (A) Make good use of technology  
 (B) Clean up and get organized  
 (C) Concentrate on one key task at a time  
 (D) All of the above.
39. Which of the Arduino pins is connected to the Data5(D5) pin on the 16x2 character LCD ?  
 LiquidCrystal lcd(12, 11, 5, 4, 3, 2);  
 (A) Pin No. 3 (B) Pin No. 2  
 (C) Pin No. 5 (D) Pin No. 4
40. In i2c connection, which pin on the Arduino Uno is utilized for SCL (serial clock) ?  
 (A) D2 (B) D4  
 (C) A2 (D) A4
41. Arduino uno have \_\_\_\_\_ size of program memory.  
 (A) 10 KB (B) 4KB  
 (C) 64KB (D) 32KB
42. Which of the following cannot be the communication barrier ?  
 (A) Language (B) Culture  
 (C) Physical (D) Habits
43. What is the standard length of MAC and IPV6 addresses ?  
 (A) 48 and 128 (B) 48 and 32  
 (C) 48 and 64 (D) 52 and 128
44. What types of instructions have the most impact on the programme counter ?  
 (A) Call & Jump  
 (B) getchar & putchar  
 (C) Call & Return  
 (D) Return & Jump
45. Which one is not the feature of M2M ?  
 (A) Low Mobility  
 (B) Time Controlled  
 (C) Circuit Switched  
 (D) Low Power Consumption
46. Which of the following is not an actuator ?  
 (A) DC Motor (B) Stepper Motor  
 (C) Relay (D) Shutter doors
47. Which is not the measure for the personality assessment ?  
 (A) Communication (B) Body Language  
 (C) Color (D) Dressing
48. The smallest difference that a sensor can detect is :  
 (A) Scale (B) accuracy  
 (C) Resolution (D) Precision

49. What will be the output of the following piece of code ?
- ```
#include <stdio.h>
int main() {
for(i = 0;i < 8; i++);
printf("%d", i);
return 0;
}
```
- (A) 0 (B) 1234567
(C) 8 (D) infinite loop
50. When a=4, what is the value of ?
- ```
b = (a >6 ?4 : 6);
```
- (A) 0 (B) Error  
(C) 4 (D) 6
51. Which command is used to create a delay in the Arduino program ?
- (A) digitalWrite() (B) for()  
(C) pinMode() (D) delay()
52. How many pins are there in 8085 Microprocessor ?
- (A) 30 (B) 35  
(C) 40 (D) 45
53. Which of the following is not passive transducer ?
- (A) Thermistor (B) Transformer  
(C) Thermocouple (D) Robot
54. All communication events have a \_\_\_\_\_.
- (A) Resource (B) Source  
(C) Start (D) End
55. Which of the following concept is not similar to IoT ?
- (A) Ubiquitous Sensor Networks  
(B) Web of Things  
(C) Cloud of Things  
(D) Virtual Things
56. What will be the output of the following code ?
- ```
void main()
{
int x = 5*6/2 +8;
printf("%d",x);
return 0;
}
```
- (A) 20 (B) 21
(C) 23 (D) 19
57. Which of the following is NOT a hard skill ?
- (A) Typing Speed
(B) Machine Operation
(C) Time Management
(D) Coding
58. Which parameter is taken through pulseIn() in ultrasonic sensor ?
- (A) Voltage (B) Frequency
(C) Time duration (D) Distance
59. Mainly Real Time Systems are used for _____.
- (A) Used for monitoring events as they occur
(B) Used for real time interactive users
(C) Used by user any time offline
(D) Used for real time coding

60. Which one cannot be suitable communication technology for IoT ?
 (A) Zigbee (B) NFC
 (C) Bluetooth (D) Wired network
61. Which compiler is used to translate C/C++ code into binary for AVR microcontrollers ?
 (A) G++
 (B) AVR-GCC
 (C) Python
 (D) Both (A) and (B)
62. What is the function name for turn on led in arduino ?
 (A) digitalwrite() (B) digitalread()
 (C) digitalWrite() (D) digitalWrite()
63. What will happen if we supply a voltage of 25V to the Vcc of the IR sensor ?
 (A) Damage is caused
 (B) Sensor will work fine
 (C) Sensor will not respond for the time the voltage is applied
 (D) Sensor will function normally
64. In the concept of Internet of Things, Things include :
 (A) Computer like Device
 (B) Non-Computer Device
 (C) Any electric Device
 (D) All of the above
65. What is the output of C program with functions ?

```
int main() {
  int a = 0;
  printf("AJAY ");
  return 1;
  printf("VIJAY");
  return 1;
}
```

 (A) AJAY VIJAY (B) AJAY
 (C) VIJAY (D) Compiler error
66. Fading technique used for _____ pin in Arduino.
 (A) A2 (B) D2
 (C) PWM (D) 5V
67. Datagram Transport Layer Security provides :
 (A) Security features on UDP
 (B) Security features on TCP
 (C) Security features on UDP and TCP
 (D) None of the Above
68. Sensor generates an output signal based on _____.
 (A) Input
 (B) Data
 (C) Physical Quantity
 (D) None
69. What will be the output of the following Arduino code ?

```
#define X 10;
void setup(){
  X=0;
  Serial.begin(9600);
  Serial.print(X);
}
void loop(){
  //Do nothing...
}
```

 (A) 0xAB (B) 0xa
 (C) 0 (D) Error

70. _____ microcontroller used in Arduino UNO.
 (A) AT91SAM3x8E (B) AT90S2313
 (C) ATmega328p (D) AT90S/LS8535
71. Which of the following is used for risk analysis ?
 (A) DREAD (B) OWASP
 (C) STRIDE (D) DAR
72. If a voltage of 5V is applied to the pin equivalent to the A0 pin on an Arduino UNO, what is the output of the programme. below ?
 (A) 0 (B) 5
 (C) 1024 (D) 100
73. What will be the output of the following code ?

```

int main()
{
  int a=5;

  while(a=123)
  {
    printf("RABBIT\n");
  }
  printf("GREEN");
  return 0;
}

```

 (A) RABBIT is printed unlimited number of times
 (B) RABBIT GREEN
 (C) Compiler error.
 (D) GREEN
74. MQTT stands for :
 (A) Message Queue Telegram Transport
 (B) Message Queue Telemetry Transport
 (C) Message Queuing Telemetry Transport
 (D) Message Queuing Telegram Transport
75. Find the correct boilerplate Arduino code ?
 (A) dataType const PROGMEM variableName [] = {};
 (B) dataType PROGMEM const variableName [] = {};
 (C) const dataType variableName [] PROGMEM = {};
 (D) const dataType PROGMEM variableName [] = {};
76. API stands for :
 (A) Application Programming Interface
 (B) Address Programming Interface
 (C) Accessing peripheral through the interface
 (D) none of the above
77. Good manners do not include :
 (A) Treating people nicely
 (B) Good Body language
 (C) Actions
 (D) Abusing
78. Likes and dislikes of learner depends on state of mind, which is _____ ?
 (A) Attitude (B) Aptitude
 (C) Motivation (D) Intelligence

79. Which of the following is an example of an LDR sensor application ?
 (A) Lights (B) Clock
 (C) Voltage Divider (D) All of above
80. Which one cannot be the one element of an IoT System ?
 (A) People
 (B) Application
 (C) Nanotechnology
 (D) Privacy
81. Which command used to print message on second line in LCD ?
 (A) lcd.setCursor(0, 0);
 (B) lcd.setCursor(0, 0);
 (C) lcd.setCursor(0, 1);
 (D) lcd.setCursor(0, 1);
82. What does GPIO stand for ?
 (A) General-Purpose Input/Output
 (B) General-Purpose Inner/Outer
 (C) Both (A) & (B)
 (D) None of the Above
83. What is role of Execution unit ?
 (A) Encoding
 (B) Decoding
 (C) Calculation
 (D) Processing
84. What programming language is the Arduino IDE written in ?
 (A) Java (B) C/C++
 (C) Python (D) Assembly
85. Which command is the 9th pin on Arduino set as output ?
 (A) int sensorPin = 9;
 (B) int sensorValue = 9;
 (C) pinMode(9, OUTPUT);
 (D) digitalWrite(9, HIGH);
86. What will be the output of the following code ?

```
int main()
{
int i = 25;
int k = i % 4;
printf("%d\n", k);
}
```

 (A) 1 (B) 2
 (C) 3 (D) 4
87. Having conscious knowledge of your own self, capabilities, feelings and one's own character is called as _____.
 (A) Self-Regulation
 (B) Self-Motivation
 (C) Self-Awareness
 (D) None of the above
88. What is temperature in Celsius LM35 for corresponding 270mV as a output voltage ?
 (A) 50 (B) 25
 (C) 27 (D) 54
89. How many terminals does the MQ2 Gas Sensor have ?
 (A) 1 (B) 2
 (C) 3 (D) 4

90. Stress related to _____ strain/tension.
 (A) Mental (B) Emotional
 (C) Physical (D) All of the above
91. When the microcontroller executes some arithmetic operations, then the flag bits of which of the following register are affected ?
 (A) DPTR (B) PSW
 (C) PC (D) SP
92. Determine the benefits of writing.
 (A) The speaker himself did not have to be present in order to communicate
 (B) The knowledge of one generation could be accumulated and passed on to the next
 (C) Both (A) & (B)
 (D) We can represent, what we want
93. How many analog pins are used in Arduino nano board ?
 (A) 12 (B) 16
 (C) 6 (D) 14
94. The following are the characteristics of Negative Stress :
 (A) It cause anxiety
 (B) It feels unpleasant
 (C) It decreases performance
 (D) All of the above
95. An individual's actions are most likely to be strongly controlled by conscience if they have a(n) _____. type of personality ?
 (A) Inner-directed personality
 (B) Other-directed personality
 (C) Partial-Directed
 (D) None of the above
96. Identify the challenge coming under securing the information.
 (A) Security
 (B) Signaling
 (C) Power Consumption
 (D) Presence Detection
97. The sequence required for the preparation of an interview is :
 (A) Job-searching, Self-Analyzing, and Identifying skills
 (B) Identifying skills, Job-searching, and Self-Analyzing
 (C) Self-Analyzing, Identifying skills, and job-searching
 (D) Self-Analyzing, job-searching, and Identifying skills
98. int a:16;what is 16 indicate here ?
 (A) Value (B) Size
 (C) Address (D) None
99. In which form data transferred in network layer ?
 (A) Packets (B) Datagram
 (C) Bytes (D) Bits
100. ZigBee is most Suitable communication standard for IoT.
 (A) Low data rate
 (B) Low power consumption
 (C) Both (A) and (B)
 (D) Easy to setup

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